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ARTICLE I.

Clinical Lectures in the Medical Wards of the Illinois General Hospital. By N. S. DAVIS, M. D., Prof. of Pathology, Practice, and Clinical Medicine, in Rush Medical College.

March 2, 1851, 9 *o'clock, A. M.*—Gentlemen: In calling your attention to the case before us, it is proper to remark that the patient, an Irish woman aged 35 years, the mother of several children, the youngest of whom is but a few months old, was seen by me two days since, when I found her in a small house destitute of every thing required for the comfort or welfare of the sick, and hence I procured her removal to the Hospital, where she was admitted last evening. It appears, from what I have been able to learn in regard to her history, that she was attacked about ten days since with the symptoms of ordinary remittent fever, viz: chills, followed by pain in the head and back, with a hot and dry skin, distinctly remitting every morning and returning with increasing intensity each afternoon. After the first three or four days, the exacerbations of fever were accompanied by delirium and great restlessness, and the morning remissions were less distinct. When I saw her two days since, her face was deeply flushed, head hot, skin hot and dry, tongue covered

with a brownish yellow fur, dry, with some redness of the tip and edges, pulse 100 per minute and moderately full, much thirst, eyes injected and watery, bowels torpid, abdomen full, and respiration hurried. She was directed to take a powder composed of Calomel 3 grs., Ipecac, 1 gr., Sup. Carb. Soda 3 grs. every three hours until four doses had been taken, and then follow them with a table-spoonful of Castor Oil; the head to be kept cool by cloths dipped in cold water, and sinapisms applied to the feet. The castor oil was followed by two or three copious evacuations from the bowels, and an almost entire intermission in the febrile symptoms, during which she was ordered Sulph. Quinine 15 grs., Pulv. Opii. 1 gr., to be divided into three doses, and given one every three hours until all were taken. Owing to the want of attendance, however, this medicine was not given, and the patient was transferred to the Hospital.

Such is a brief history of the case up to the present time. You will now observe that the patient presents a very dull and stupid expression of countenance, the conjunctiva of the eye is injected, the position is dorsal, the prolabia and cheeks of a leaden or purplish hue, skin dry and warm, tongue covered with a brownish coat in the middle and red at the edges and tip, much thirst, abdomen full and moderately tympanitic, has had during the last twelve hours two or three dark, fœtid and liquid evacuations from the bowels, pulse 110 per minute and easily compressed, little or no milk in her breasts, and manifests entire indifference in regard to her children. She complains of a disagreeable ringing or noise in her head, and slight deafness. The respiration is quicker and shorter than natural, and as I place my ear over the infra-clavicular regions, a dry whizzing or sibilant rattle is heard over a considerable extent on both sides. But the resonance on percussion is good.

Such, gentlemen, are the present symptoms. What do they indicate? How shall we interpret them, and what is the true pathological condition of the patient? In technical language, what is the diagnosis? The past history shows it to have been in the beginning a distinct remittent, arising under circumstances of exposure, destitution and mental anxiety. This continuing unchecked by appropriate treatment, gradually exhausted the vital energies on the one hand, and developed a phlogistic or inflammatory condition of the mucous membranes on the other. Hence the frequent and compressible pulse, the mental indifference, and stupid expression of countenance, coupled with the full and tympanitic condition of the abdomen, the dark watery evacuations, and the dry sibilant zonchus, which now constitute the prominent features of the case, and fairly bring it under the head of Typhoid fever, with special local determinations. The word Typhoid, as you are well aware, is used by different writers differently; some regarding it simply as synonymous with Typhus, while others, among whom are many eminent French writers as well as some in our own country, apply it to what they regard as a distinct variety of fever characterized by specific pathological lesions. I think, however, that the words Typhus and Typhoid should be used as strictly comparative terms, indicating different degrees of the same general condition of the organic or vital forces, and without reference to any special local lesions. For instance, if disease attacks an individual poorly fed, and exposed to the foul air of damp, ill-ventilated apartments, or the crowded hold of a ship, his symptoms will at once present that peculiar aspect which all agree in representing as true Typhus. And if it proceeds to a fatal termination, a post mortem examination may reveal local lesions either in the head, the chest, or the abdomen. True, there is a greater tendency to develope local disease in

the latter cavity, and especially in the mucous membrane of the intestines than elsewhere; but this by no means occurs so uniformly as to be entitled to the appellation of a specific and essential part of the disease. Again an individual exposed to less depressing and poisonous influences, may be attacked with fever either remittent or continued, and during the first week the symptoms will present a more or less active or stenic character. But the disease continuing unchecked, the excretory organs, as the skin, kidneys, liver, &c., perform their functions but imperfectly, leaving more or less excretory matter of a deleterious and depressing nature in the system, which added to the ordinary exhausting effects of all morbid action, sooner or later induces that impaired condition of the organic or vital forces which I have already described as characteristic of true Typhus. In ordinary professional parlance, what was regarded in the beginning as a simple remittent or continued fever, has now put on a Typhoid form. And this Typhoid state may, like true Typhus, be accompanied by local lesions in any of the important viscera of the system, though experience has shown that the folicles and glands of the intestinal mucous membrane are by far the most frequent seat of such lesions. You will thus see, gentlemen, that I use the words Typhus and Typhoid, to indicate a certain impaired condition of the vital forces in a febrile state, without reference to any particular local affection, or the intervention of any specific cause. Taking this view, you will readily see that we may have in practice every shade of Typhoid condition, from the complete Typhus which occurs among emigrants crowded on shipboard, to the slightest Typhoid tendency induced as a result of a more active but uncontrolled morbid condition.

In the case before us, we have, strictly speaking, a secondary Typhus supervening on a more active form of fever, and complicated with inflammatory action in the mucous tissue both of the small intestines and bronchial tubes.

Prognosis.—The final result of this case is doubtful. The frequency of the pulse, and the evidences of local disease, both in the pulmonary and intestinal mucous membranes, with the well known tendency of the latter to terminate in extensive superficial ulceration, give us fears of a fatal result. Still many cases recover with symptoms more unfavorable than in the present instance, and hence the patient ought to be encouraged to hope for the best.

Treatment.—You will see at a glance that we have two prominent indications to fulfill in the further treatment of this case, viz: First, to sustain the circulation and nervous energy of the system, or, at least, prevent them from becoming further impaired; and second, to remove the local affection of the mucous surfaces. What we have always to fear in such cases as this, is, that the intestinal mucous surface will become ulcerated, causing the abdomen to become more tympanitic, and the discharges more frequent and watery or dark and grumous, with steadily increasing depression of the vital forces; or the pulmonary mucous surface will take on a copious suppurative action, inducing copious expectoration, night sweats and rapid emaciation. Hence the accomplishment of the second indication named is the all-important object at the present moment. But how shall this be done? Not by depletion either general or local—not by mercurials or antimony; for there is already too much depression to admit any of these, except perhaps an alterative dose of Calomel given at remote intervals and coupled with an anodyne. Neither will the patient be benefited by that class of stimulants called diffusive, and which tend to excite the circulation. In my own practice I have found no class of remedies to act as favorably on that peculiar grade of mucous inflammation, (if such we may call it,) which exists in this and similar cases, as the Balsamic and Terebinthinate articles conjoined with small doses of opiates, aided by counter irritation externally. Without attempting to explain the exact *modus operandi* of this class of reme-

dies, we may suppose that they exert a peculiar influence over the capillary circulation, while they promote the secretions from the skin and kidneys without depressing the general tone or energy of the organic actions. They are best given in the form of emulsion. At present we will direct the following formula: ℞ Balsam Copaiba ℥ij, Tinct. Opii. ℥j, White Sugar and Gum Arabac each ℥iij, rubbed thoroughly together and added to Water ℥ij. Of this one tea-spoonful must be given every four hours. We will also place a large blister over the epegastric region, and allow bread water, with some plain animal broth for drink and nourishment.

March 3, 9 *o'clock, A. M.**—All the symptoms remain as yesterday, except the tongue is more moist, the dry ronchus of yesterday is changed to one more moist, with an occasional cough and expectoration of muco-purulent matter, and no alvine evacuations since last visit. Blister has drawn well. The pulse remains over 110 per minute, and the abdomen more tympanitic.

Ordered a cathartic composed of Castor Oil two parts, Oil of Turpentine one part, half an oz., and after its operation to continue the emulsion every six hours.

March 4, 9 *o'clock, A. M.*—The cathartic procured three copious, dark-colored, but less watery evacuations from the bowels; the abdomen is much less tympanitic, the tongue moist and less red at the tip and edges, the skin moist, and expression of countenance somewhat improved. Still, the pulse remains as frequent as before, and the cough and expectoration have greatly increased.

Continue the emulsion as before, with another blister over the upper and anterior part of the chest.

March 5, 9 *o'clock, A. M.*—The symptoms of intestinal

*Having embodied a pretty full view of the case in the report of yesterday, we shall omit the Professor's remarks from day to day, and report only so much as will enable the reader to follow the treatment to its termination.

irritation have almost entirely subsided. There has been one evacuation from the bowels, and that of a more consistent and natural appearance. But the patient had a distinct febrile paroxysm last evening, which ended towards morning in a profuse sweat, the skin still remaining moist and the patient complaining of much weakness. The expectoration still remains copious, of a purulent character, and the pulse 105 per minute. Ordered her Quinine 5 grs., with Pulv. Opium ¼ gr., to be given now, and the same repeated to-morrow morning at 6 o'clock. Also a mixture of Hive Syrup ℥ij, Tinct. of Blood-root ℥ss., and Tinct. Opii ℥j; mix and give one tea-spoonful every four hours.

This treatment was continued with a subsequent additional blister over the chest, and an occasional laxative of Syrup of Rheubarb through the next five days, and the patient steadily though slowly improved. The hectic paroxysms subsided, the expectoration lessened, the pulse became slower, and the tongue clean and natural. The patient, however, remained much emaciated and feeble. She was then put on the use of Cod Liver Oil, a table-spoonful three times a day, with a plain, nutritious diet, and she rapidly recovered her usual health, being discharged on the 1st of April.

ARTICLE II.

An Experimental Inquiry concerning some points in the Vital Processes of Assimilation and Nutrition. Read before the American Medical Association at its Annual Meeting in Charleston, S. C., May, 1851. By N. S. Davis, M. D., Prof. of Principles and Practice of Medicine, and Clinical Medicine, in Rush Medical College; Member of the American Med. Association; one of the Physicians to the Illinois Gen. Hospital, &c., &c. Chicago, Illinois, 1851.

The following experiments and observations constitute part of a series undertaken for the purpose of ascertaining, first: The influence of different kinds of food and drink on the functions of Calorification and Respiration, as indicated by the changes of temperature and the variations in the quantity of carbonic acid gas thrown off during expiration, in the healthy condition of the human system; and second, the changes which the several constituents of the blood undergo in their relative proportions during the passage of that fluid through the secreting organs and some of the non-secreting structures of the human body.

According to the prevailing Physiological doctrines concerning Digestion, Respiration, and Calorification, all alimentary substances are divided into two great classes, viz: the *nitrogenized* and non-nitrogenized or carbonaceous. Those belonging to the first class, are supposed to be used principally for nourishing the tissues; while those of the second, are consumed in supporting the functions of respiration and calorification. Admitting the correctness of these positions, we should reasonably infer that an individual fed exclusively on carbonaceous aliment would maintain a higher temperature and emit a greater proportion of carbonic acid gas with the ex-

pired air than when confined to a diet altogether nitrogenous. To test the correctness of this view by direct experiments constituted the object of the first series of observations which will be detailed in a subsequent part of this paper.

Closely connected with the prevailing doctrines concerning the nature and uses of different alimentary substances, is the composition of the blood, and the origin of its several proximate constituents, and their respective uses in the animal economy.

The same chemico-physiological views which have led to a division of aliments into nitrogenized and non-nitrogenized, have also regarded the latter class as the source of carbonic and lactic acids, water, &c., in the blood, the formation of which generated the caloric necessary for maintaining the temperature of the body; while the former or nitrogenized class, furnished the albumen, fibrin, and corpuscles or cell-structures, constituting the plastic materials necessary for supplying the waste of the tissues. And most Physiologists agree with Dr. Carpenter, in considering albumen as the primary form to which this class of aliment is reduced by the digestive processes, and that the conversion of albumen into fibrin is a further assimilative change—a step nearer to a state of organization. Thus, says Carpenter, "albumen is always the starting point; since the fibrinous elements of organized tissues are reduced, by the solvent powers of the gastric fluid, to the same form with the unorganized coagulum of the albumen of the egg. The conversion of albumen into fibrine, therefore, is the *first* great step in the process of nutrition, by which the materials supplied by the food are made to form part of the living tissues of the body; and it is the one to which the term *Assimilation* may be most appropriately applied." Many facts, however, are to be met with not easily reconciled to the view so ably maintained by Dr. Carpenter and others. And it was with the hope of throwing some ad-

ditional light on the subject, that I instituted the analyses which constitute the second series of experiments detailed below.

First Series.—In this series of observations my first object was to ascertain the *temperature* of the body in a state of health, at different periods of the day, and under the influence of an ordinary mixed diet of animal and vegetable food; and coincidently therewith, the relative proportion of carbonic acid exhaled with the expired air. For this purpose I chose a healthy man, aged 34 years, whose habits of life were regular and strictly temperate, and noted his temperature as indicated by a reliable thermometer, the bulb of which was placed under the tongue, and allowed to remain five minutes with the mouth closed around it. Immediately after noting the temperature, eight cubic inches of expired air was collected in a graduated tube or small jar, inverted over mercury. From the mercury bath, the jar was removed to one of fresh lime water, and allowed to remain until absorption ceased. The height to which the lime-water rose in the jar indicated the quantity of carbonic acid which had been removed from the given quantity of expired air. These observations were repeated six times each day, viz: at 7½ A. M., half an hour before taking food; between 10 and 11 A. M., from two to three hours after breakfast; at 12½ P. M., immediately before dinner; at 3½ P. M., two and a half hours after dinner; at 5½ P. M., immediately before tea; and 8 P. M., two and a half hours after tea.

The temperature of the room in which all the observations were made did not vary at any time more than two degrees from 50° of F., and the mercury and lime-water baths were always in the same room. The following is the average result of 16 days' observations under an ordinary mixed diet, viz:

	7½ o'clock, A. M.	10½ A. M.	12½ P. M.	3½ P. M.	5½ P. M.	8 P. M.
Av. Temperature,	94° F.	96° F.	95°2 F.	96°7 F.	95°2 F.	96° F.
Highest,	94°5 F.	97°3 F.	96° F.	97°3 F.	95°5 F.	96° F.
Lowest,	93°7 F.	95°6 F.	94° F.	96°3 F.	95° F.	96° F.
Average of Carb. Acid in 8 Cubic Inches of Expired Air.	12-16 of a Cubic inch, or 1 part in 10.6.	11-16 C. I. or 1 to 11.6.	11½-16 C. I., or 1 to 11.1.	14-16 C. I., or 1 to 9.1.	14-16 C I., or 1 to 9.1.	13-16 C I, or 1 to 9.8.

Two interesting inferences are fairly deducible from this table, viz: First, that the temperature of the body is uniformly from one or two degrees higher during the active stage of digestion, that is, about two hours after eating, than after the digestive process is fully completed. Second, that the temperature of the body and the relative proportion of carbonic acid gas in expired air, do not bear a uniform ratio towards each other. The greatest amount of carbonic acid being exhaled between the hours of 3 o'clock P. M. and 6 o'clock P. M., and then diminishing until 10 o'clock A. M., of the following day; while the temperature uniformly rose from one to two degrees during every regular period of digestion, reaching its greatest height about two hours after dinner. My next object was to continue the same observations under the influence of a diet as strictly *carbonacious* as was consistent with healthy digestion. For this purpose the same individual was confined for three days, to a diet consisting exclusively of rice starch, boiled, and white sugar, eaten freely three times a day at the usual hours. The observations during these three days were continued with the same apparatus and under the same circumstances as before, and the results are seen in the following table, viz:

	7½ o'clock, A. M.	10½ A. M.	12½ P. M.	3½ P. M.	5½ P. M.	8 P. M.
Av. Temperature,	93°4 F.	95°7 F.	95° F.	96° F.	94°7 F.	95°2 F.
Highest,	93°7 F.	96° F.	95°1 F.	96° F.	95°5 F.	95°2 F.
Lowest,	93° F.	95°5 F.	95° F.	96° F.	94° F.	95°2 F.
Average of Carb. Acid in 8 Cubic Inches of Expired Air.	11½-16 of C. Inch, or 1 part in 11.1.	12½-16 C. I., or 1 in 10.2.	14-16 C. I, or 1 in 9.1.	13-16 C. I., or 1 in 9.8.	12-16 C. I., or 1 in 10.6.	12-16 C I., or 1 in 10.6.

Two things will strike the reader while comparing this with

the preceding table. First, the average temperature of the system throughout the day ranges about half a degree *lower* than under a liberal mixed diet of vegetable and animal food. Second, the average amount of carbonic acid contained in the expired air is very nearly the same for the entire day, but instead of appearing in the smallest proportion between the hours of nine and twelve A. M., and the greatest proportion between three and six P. M., as in the first table, we find these extremes between six and nine A. M., and twelve M. and three P. M. Another variation which does not appear in the table, but which was fully verified by repeated trials, consisted in the fact that the temperature as indicated by the thermometer under the tongue, more quickly attained its maximum height after eating and began again to decline, than under the influence of a mixed diet.

After a few days interval, during which an ordinary mixed diet was allowed, the same individual was confined for three days to a diet exclusively *nitrogenous*, consisting of *albumen* of *eggs*, from which the yolk was wholly excluded, eaten in liberal quantities three times a day, at the hours previously mentioned, and once a day a very small quantity of dried beef, from which care was taken to remove as far as possible every vestige of fat and cellular tissue. The following is the result, viz:

	7½ o'clock, A. M.	10½ A. M.	12½ P. M.	3½ P. M.	5½ P. M.	8 P. M.
Av. Temperature,	95° F.	95°6 F.	95°8 F.	96°2 F.	95°3 F.	95°6 F.
Highest,	95° F.	96° F.	95°9 F.	96°5 F.	95°5 F.	95°8 F.
Lowest,	95° F.	95°3 F.	95°7 F.	96° F.	95° F.	95°5 F.
Average of Carb. Acid in 8 Cubic Inches of Expired Air.	14-16 of a Cubic Inch, or 1 part in 9.1.	12-16 of C. I., or 1 in 10.6.	12½-16 C. I., or 1 in 10.2.	12-16 C. I., or 1 in 10.6.	12-16 C. I., or 1 in 10.6.	13-16 C I., or 1 in 9.8.

In glancing over this table, we are struck at once with the uniformity of temperature maintained throughout the entire day, there being a variation of only a little more than *one* degree from the lowest point before breakfast to the highest, two

hours after dinner. While in both the previous tables the difference between the same hours is but little less than *three* degrees. And yet, the mean temperature for the entire day is nearly the same in all.

It being in the first under mixed diet, - - 95°5

In the second under an exclusive carbonaceous diet, 95°

In the third, under an exclusive Nitrogenous diet, 95°6

The proportion of carbonic acid exhaled from the lungs, as seen in the third table, also differs in two respects from the two preceding. First, the proportion is more uniform throughout the day, varying only from 1 part in 9.1 to 1 in 10.6 of the expired air. Second, the period when the carbonic acid was greatest is almost the reverse of that in the first table, being greatest late in the evening and early in the morning, instead of early in the afternoon. This will be seen more readily by glancing at the following table:

Average proportion of Carbonic Acid in Expired Air under the influence of a mixed diet during whole day,	1	cubic inch	in	10.24
Highest average between 3 o'clock P. M. and 6 P. M.,	1	"	"	9.1
Lowest average between 9 o'clock A. M. and 12 M.,	1	"	"	10.6
Average for whole day under Carbonacious diet,	1	"	"	10.17
Highest average between 12 o'clock M. and 3 P. M.,	1	"	"	9.1
Lowest average between 6 o'clock A. M. and 9 A. M.,	1	"	"	10.9
Average for whole day under Nitrogenous diet,	1	"	"	10.11
Highest average between 6 o'clock A. M. and 9 A. M.,	1	"	"	9.1
Lowest average between 3 o'clock P. M. and 6 P. M.,	1	"	"	10.6

A comparison of these averages with the average temperature of each day under the different systems of diet, will lead to the same conclusion as the inspection of each individual table. That is, the absence of any uniform correspondence between the actual temperature of the body and the quantity of carbonic acid exhaled from the lungs. On the contrary, it would seem that the temperature is uniformly greatest during the middle or active period of digestion, and diminishes in proportion to the length of time which elapses before a fresh supply of food is taken. Hence the lowest temperature was always in the morning before breakfast, when about 14 hours

had intervened since taking food the previous evening.—While the proportion of carbonic acid exhaled reached its maximum under the carbonaceous diet about 12 M., under the mixed diet about 3 o'clock P. M., and under the nitrogenous, not till 7 o'clock the following morning.

These variations, both in regard to temperature and expired carbonic acid, are doubtless owing chiefly to the difference in the digestibility of the several classes of food used. Thus it was very evident, from the feelings of the individual subjected to experiment, that the well boiled rice starch was easily and quickly digested and removed from the stomach, accompanied by a correspondingly rapid rise and subsequent fall of temperature, with the maximum proportion of carbonic acid at mid-day. The digestion of the mixed diet was more protracted, the rise of temperature a little slower and longer sustained, and the maximum proportion of carbonic acid three hours later in the afternoon. The diet of albumen was very slow of digestion, being sensibly felt in the stomach from the end of one meal to well nigh the commencement of another, and consequently the rise of temperature was so gradual and protracted as to present comparatively little variation during the entire day, and the maximum proportion of carbonic acid was not exhibited until late in the evening or early next morning.

But the most interesting question connected with these observations, is that which relates to their bearing on the commonly received doctrines in relation to the uses of the two classes of diet, called Carbonacious and Nitrogenous. The Chemico-Physiological doctrines in regard to diet, nutrition, respiration, and animal heat, first extensively and systematically promulgated by Liebig, were so simple and plausible as to meet an almost unparalleled popular reception, and with various modifications to become speedily incorporated, as received truths, into almost all the Physiological works of the

day. These doctrines, as has been previously stated, assign to the carbonaceous articles of food, including oils or fats, starch and sugar, the office of furnishing carbon and water to the blood and fat to the tissues, from which result carbonic acid in expired air and heat to the whole system; while the nitrogenous articles, including vegetable and animal albumen, fibrin, &c., were more especially or exclusively used to supply the corresponding elements of the blood, and nourish the tissues of the body. Notwithstanding these doctrines have met with so general a reception, both within and without the ranks of the profession of medicine, they rest, so far as I can discover, entirely on their plausibility, aided by considerations of the most general and ill-defined character. Such as the allegation, that man eats more fat and carbonaceous substances in winter than summer, in cold countries than warm; that all the constituents of the blood and tissues are found in the food, and consequently digestion is a process of solution and not of transformation, at least, so far as regards the albumen, fibrin, &c.; and that, as starch is convertible into sugar, and sugar, with the addition of oxygen, into carbonic acid and water out of the body, they therefore undergo the same changes when taken as food into the body, &c., &c. But I am not aware that up to the present time, any one has attempted to demonstrate their truth by direct experiments, except so far as the observations embodied in the foregoing tables may be considered such an attempt. And these, so far from demonstrating their truth, militate very strongly in the opposite direction. Indeed, should they be corroborated by further and more extended observations of the same character, we shall be forced to renounce much of the doctrines briefly alluded to, notwithstanding their captivating simplicity. If the chief uses of the carbonaceous articles of food, consist in furnishing fat and water to the blood, carbon to the respiratory process, and caloric to the whole system, then

an abundant, if not exclusive supply of these articles, should both elevate the temperature of the body and increase the proportion of carbonic acid in the expired air; while a deprivation of them, should cause a rapid diminution of both. No propositions could be more clear than these. And yet, according to the experiments already detailed, performed with all the precautions to ensure accuracy which I could devise, no such results were obtained. It may be thought that three days were not long enough to afford a fair test; but if we remember that the lowest estimates place the amount of carbon exhaled at *eight ounces* every twenty-four hours, making 24 ounces of solid carbon during the continuance of each series of our observations, and then observe the contrast between an abundant or even excessive supply in the form of carbonaceous food, and an entire deprivation of this class of aliment, we certainly should have good reason to expect a marked variation in the result. For if it might be supposed the carbon already in the blood, would be sufficient to keep the proportion of carbonic acid in the expired air up to the ordinary standard for a time after the supply of the corresponding class of aliment had been cut off, this surely could not be continued, without a well marked diminution, until more than twenty ounces of solid carbon had been exhaled. But the third table given above, not only shows no diminution in the average proportion of carbonic acid exhaled while under a strictly nitrogenous diet, but the details of each days' observations included in the table, show full as large a proportion of carbon in the expired air during the last day as the first; and this, too, when less than a single ounce of any food other than albumen and water had been taken during the whole three days. Such a result taken in connection with the full maintainance of the temperature of the system, renders it at least doubtful whether the nitrogenous and non-nitrogenous articles of diet have any such separate and distinct uses

in the animal economy as have been assigned to them. We should by no means consider the foregoing experiments sufficient to enable us to draw therefrom established and reliable conclusions, but should they be corroborated by further extension and repetition, they will show most conclusively that animal heat corresponds with the activity of absorption and nutrition, while the expired carbonic acid is a product of the decomposition of tissues rather than of any particular class of food. And hence that both are kept up to their full healthy standard, as well by nitrogenous as carbonaceous food, so long as the digestive apparatus is capable of dissolving either or both with facility. These views are still further corroborated by our experiments with Alcohol, which, from its highly carbonaceous character, is regarded by Liebig, and others, as one of the most efficient supporters of combustion, and consequently of animal heat, that we possess. Prout had long since demonstrated that Alcohol taken into the system, instead of furnishing carbon for the respiratory process, speedily and decidedly diminished the exhalation of that material from the lungs; and his observations have since been abundantly confirmed by M. M. Bouchardat and Sandras. But neither of these gentlemen took any measures to test the actual variations of temperature in the system while under the influence of the alcohol, and the accompanying diminution in the quantity of exhaled carbon. And hence Liebig attempts to obviate the force of any objection founded on the results of the experiments of Prout and Bouchardat, by alledging that "the increased formation of *water*, which will occur when Alcohol is the combustive material, compensates for the diminution in the amount of carbonic acid expired, and thus the normal amount of heat may be generated." For the purpose of supplying this defect, the following experiment was performed on the same individual, and with the same apparatus as in all the previous cases.

At 9 o'clock, P. M., three and a half hours after supper, the temperature as indicated by the thermometer under the tongue was 95°, and the proportion of carbonic acid in the expired air 1 to 13. The pulse was 80 per minute, which was about the normal standard for the individual. Four ounces of strong brandy were now taken. At the end of 45 minutes, the pulse was increased to 90 per minute, the temperature unaltered, remaining precisely at 95°, but the proportion of carbonic acid in the expired air was diminished to 1 part in 14.2. At the end of one hour, the pulse had fallen to 85 per minute, the temperature still remained at 95°, but the proportion of carbonic acid in the expired air had still further diminished to 1 part in 16. At the end of two full hours, the pulse had returned to 80 per minute, the mercury failed to reach 95°, being not more than 94°8, while the proportion of carbonic acid in the expired air had perceptibly increased. At 45 minutes past 11 o'clock, 2¾ hours after taking the brandy, the temperature had fallen to 94.5, and the proportion of carbonic acid in the expired air had increased to 1 part in 12.5. This experiment was repeated a second time with precisely similar results. It will be seen that it fully corroborates the observations of previous investigators in regard to the diminution of the quantity of expired carbonic acid, while it at the same time proves that there is not only *no increase* of temperature, but a subsequent decided diminution. If it be asked, how these results are to be reconciled with the well known good effects of Alcohol in sustaining the vital energies in certain low or typhoid forms of disease, we confess our inability to answer, on the supposition that it is a simple *combustive*, or heat-generating agent. But does the defect, supplied by Alcohol, in the forms of disease alluded to, consist in simple defective or insufficient calorification?

A careful review of all those cases or forms of disease in which Alcoholic stimulants prove beneficial, will conclusively

show that the fundamental defect is in the function of *innervation*, and that whatever failure there may be in the actual temperature of the system, it is secondary or consequent on the arrest, partial or complete, of the molecular or organic actions, which if not dependent on, are at least more or less influenced by the nerves of organic and animal life. And hence the beneficial effects of Alcohol in all such cases, can be much better explained, by supposing it to act directly on the nervous tissue, for which it is well known to possess so strong an affinity. By thus increasing the innervation, the organic actions are sustained, nutrition recommences and animal heat is generated—and that, too, without any *combustion* of the Alcohol, or anything approaching to the nature of that process. Such an explanation is also perfectly consistent with the effects of the Alcohol on a healthy system, as shown by the experiments alluded to above.

Without presuming to draw any conclusions from the incomplete investigations detailed above, it may not be improper to state as the result of all our researches thus far, that the doctrine of *combustion* in the animal economy, by which is meant the appropriation of certain alimentary substances to the nourishment of the tissues, and certain others to the *direct* support of respiration and animal heat, by being resolved into carbonic acid and water in the blood, rests on nothing but a purely theoretical foundation. On the other hand, the phenomena of both health and disease, unite with the experimental inquiries hitherto instituted bearing on this subject, in pointing us to the conclusion that the *carbonic acid* of the respiratory process, like the secretions from the skin and kidneys, is a true product of the decomposition or metamorphosis of the structures of the body, while the *temperature* depends directly on those changes which take place in the nutritive and organic actions.

This view compels us to suppose that all digestible sub-

stances, whether carbonaceous or nitrogenous, are assimilated and appropriated with more or less facility to the nourishment of the solid textures of the body. But it by no means precludes the idea, that certain articles of food may generate an excess of either carbonaceous or nitrogenous elements in the blood, and that such elements may serve to increase the amount of excretion from either the lungs or kidneys, without having previously constituted any part of the solid tissues, and without undergoing any process really analagous to combustion. But it was not so much my intention to draw Physiological conclusions as to state such facts as I had thus far been able to demonstrate. Hence I shall hasten to the second department of this paper.

Second Series.—The blood, as the common fluid from which all the animal tissues receive their nourishment on the one hand, and all the secreting organs and surfaces receive the materials for their several secretions on the other, has long been a prominent subject of study both by the physiologist and the physician. And yet the prevailing views in regard to the origin and uses of its several proximate elements are, as has been already stated, far from being satisfactory or well settled. Notwithstanding the most patient research, and the many analysis of blood which have been made, no one has yet satisfactorily distinguished those ingredients which are truly *nutritive*, from those which are incapable of affording nourishment, or have served their purpose, and are hence on their way to some one of the excretory outlets of the system. It is generally considered, for instance, that the waste nitrogenous matter resulting from the constant change going on in the organized tissues of the system, finds its chief exit through the kidneys in the form of Urea, Uric Acid, &c., but no one has yet satisfactorily pointed out the *form* it assumes while passing from the tissues to the kidneys. It surely cannot be in the form of Urea, for if so, the quantity is so great that its

presence in the arterial blood would always be easily detected. And Simon's suggestion that it is the extractive matters of the blood from which the nitrogenized constituents of the urine are derived, is simply an opinion without proof. There are very few opinions in Physiology more universally assented to, especially by British and American physiologists, than that the albumen and fibrin of the blood are its chief *nutrient* elements; the latter being especially regarded as presenting the highest degree of assimilation, bearing, according to the expression of Carpenter, the same relation to organized tissue, that the "*spun yarn* does to the *woven fabric*." And yet if this is so, why do we find fibrin in its full proportion, or even in excess in protracted Anemia, in the wasting hectic of Phthisis, and in all acute inflammations, after the patient has perhaps been many days without nourishment of any kind? The ordinary explanation, which consists in attributing the increase of fibrine in these cases, to the more rapid oxydation (or assimilation, if you please,) of the albumen, in consequence of the greater rapidity of the circulation and respiration, is very unsatisfactory; first, because no such increased rapidity of either circulation or respiration, takes place in many of the cases to which the explanation has been applied; and second, because it is very difficult to conceive how more oxygen can gain access to the blood, when half of the pulmonary tissue is, perhaps, rendered impermeable by tubercular deposits and vomica, or when the access of air to the lungs is greatly diminished by an extensive pulmonary or laryngeal inflammation. Neither is the view taken by Simon,* who attributes the elaboration of the fibrin to the dissolution or metamorphosis of the red corpuscles of the blood, and who,

*It is necessary to remind the reader that this essay was prepared before the recent views of Simon, as stated in his Lectures delivered at St. Thomas's Hospital, London, during the summer session of 1850, had been seen by me. In those lectures Simon has arrived at conclusions much more nearly in accordance with those presented in the latter part of this paper; though without instituting any new experiments or analysis in support of them. It is gratifying, however, to find myself both anticipated and sustained by an authority so justly eminent.

consequently, asserts that the increase of fibrin is in proportion to the rapidity of the consumption of such corpuscles, any less liable to objections. And the rule which he lays down as the necessary consequence of this explanation, viz: "that the *amount of fibrin must always stand in an inverse ratio* to that of the blood-corpuscles," is by no means sustained either by his own analytical tables, or those of Andral, Gavaret, Rodier, and others. Indeed, the tables he has given on pages 205 and 206 of his work on the Chemistry of Man, illustrating the influence of blood-letting or the composition of blood, not only destroy the theory adopted by Simon, but furnish an additional objection in the way of considering fibrin as the chief nutrient element of that fluid. These tables, compiled from the analysis of Andral, Gavaret, Rodier, and Simon, show very conclusively that blood-letting increases the relative proportion of water and fibrin in the blood, while its corpuscles and all the other solid constituents are diminished. Now if we suppose fibrin to be a highly elaborated product, resulting from the metamorphosis of the red-corpuscles, it is certainly difficult to conceive how the direct abstraction of such corpuscles, by bleeding, should add to the relative quantity of fibrine left in the blood. On the contrary, if the one results from the natural maturation and dissolution of the other, we should suppose that the direct abstraction of the latter, without such dissolution, would necessarily be accompanied by a diminution of the former. The rapid increase of the relative proportion of water after bleeding, is by universal consent, attributed to the rapid absorption of water from the various tissues and surfaces of the body; and if we suppose fibrin to be present in the various tissues as a waste product, the maintainance of its full proportion would be satisfactorily accounted for in the same manner as the water.

Again, it would be reasonable to infer, that the blood, in a perfectly healthy state of the system, when the digestive pow-

ers were active and the supply of food abundant, would present a full or predominant relative proportion of those ingredients which result directly from the function of assimilation and are designed to nourish the textures; and it is then that we always find the blood-corpuscles, the albumen, the fatty matter, &c., most abundant.

On the other hand, when such diseases occur as are accompanied by an entire disrelish and consequent discontinuance of food, together with an active capillary circulation and rapid emaciation or waste of textures, we should expect to find those elements of the blood which are derived from a waste of the organized structures decidedly increased in their relative proportion; more especially so if those diseases were also accompanied by a diminution of the more important excretions, as is the case in almost all the acute inflammations. And what are the facts as revealed on almost every page of Pathological investigation? Simply, that these are the very diseases and circumstances under which the blood exhibits its largest proportion of fibrin and salts—especially the former. While on the other hand, all those diseases characterized by diminished innervation and consequent sluggish capillary circulation, and in which absorption and emaciation are much less rapid—such as Typhus, Scurvy, &c.—the fibrin remains normal in its proportion or diminishes, while the corpuscles and albumen remain but little or not at all diminished.

The foregoing considerations, with many others that might be mentioned, led me long since to doubt very much the correctness of the generally received opinions in regard to the origin and uses of the fibrin, as well as some of the other constituents of healthy blood. Whether the fibrin be truly nutritive in its character, or whether it be a product of the first step in the process of metamorphosis or waste of tissues, we should expect in health to find it nearly equal in the gen-

eral mass of venous and arterial blood—in the first case perhaps slightly in excess in arterial, and in the latter, in venous blood. If, however, it be a product of the first step towards decay or metamorphosis of tissues, and therefore destined for excretion, we should expect the blood, in those veins which return the circulating fluid from the organs engaged in its excretion, to contain decidedly less of this element than either that of the arteries leading to such organs, or of the veins leading from non-secreting or muscular parts of the body. On looking over the analysis of Andral, Gavaret, Lecanu, Shultz, Denis, Becquerel, Bodier, Lehman, Simon, and others, I find but one attempt to institute an analytical comparison between the quantity of fibrin in the veins returning blood from secreting organs, and that found in the arteries. And I nowhere find the relative composition of the blood in the veins of an actively secreting organ, compared with that in the veins returning from non-secreting or muscular parts. There have been numerous analysis of veinous blood in comparison with arterial, but without any reference to the particular parts from which the veinous blood was returned. The one exception to which allusion was just made, was by Simon, who procured the blood from the Renal veins, the Hepatic veins, and the Aorta of a horse, and subjected it to careful analysis, particularly in reference to the quantity of *fibrin* contained in each specimen. The results are given on page 139 of his work on the Chemistry of Man, and are as follows, viz:

Renal Vein.		Hepatic Vein.		Aorta.	
Water,	778,000	Water,	725,000	Water,	790,000
Albumen,	99,230	Albumen,	130,000	Albumen,	90,300
Fibrine,	,000	Fibrine,	2,500	Fibrine,	8,200
Whole solid matter,	222,000	Whole solid matter,	275,000	Whole solid matter,	210,000

This presents truly a striking result; the blood returning from two of the largest secreting organs in the body is found to contain far less *fibrin* and *water*, and more *albumen* than

that from the Aorta. But there are two circumstances which render this analysis unsatisfactory. First, the horse from which the blood was taken was not healthy, and in a *starved* condition. Second, the quantity of blood obtained from the Renal veins (being only 50 grs.) was insufficient to determine accurately the proportion of fibrin.

To obviate these objections, and at the same time add another important element to the comparison, I procured a large, healthy, and active dog, and procured some blood from the Renal vein, the Illiac vein, and the Illiac Artery, in the following manner: The dog was stunned by a blow on his head, the abdomen being quickly laid open, a ligature was passed around the Renal vein near its entrance into the ascending cava, and on puncturing the vein, 590 grains of blood flowed readily into a clean cupping glass. A ligature was next passed around the Illiac vein, and on puncturing it 771 grains of blood were easily collected in another cup. The Illiac Artery, being now of easy access, was punctured, and the blood flowed in a full pulsating stream, and was received into a third cup, to the amount of 1816 grains. Up to this time the dog continued to breathe slowly, and the circulation went on vigorously; but in attempting to procure some blood from the Hepatic vein, the diaphragm was cut through, the breathing ceased, and the hepatic vein was found so empty that a satisfactory amount of blood could not be obtained. The left ventricle of the heart was then laid open and a fourth specimen of blood, to the amount of 425 grains, was obtained from its cavity. All these specimens of blood were most carefully analyzed, following in all respects the method recommended and so long practiced by Andral, and Gavarret, with the single exception of the mode of separating the fibrin. For accomplishing this most accurately, I fully agree with Mr. Bence Jones, preferring to allow the blood to coagulate perfectly, and then enclose the whole clot in a clean, firm linen

cloth, and wash it with distilled water until the red-corpuscles are entirely removed. From several trials I am satisfied that this method separates the fibrin more perfectly than the whipping or stirring with sticks, as practiced by Andral. There being nothing peculiar in the other steps of the analysis, it would be useless to detail them here. The results in tabular form are as follows, viz:

	Blood from Left Ventricle.	Bld. from Iliac Artery.	Bld. from Iliac Vein.	Bld. from Renal Vein.
Whole amount analyzed,	425 grs.	1816 grs.	771 grs.	590 grs.
Solid matter after separating fibrin,	78,2	341,0	145,0	115,0
Water,	345,9	1471,0	624,0	474,0
Fibrin,	,9	4,0	2,0	1,0
Albumen,	46,5	180,9	69,0	58,1
Red-Corpuscles,	34,0	150,1	71,0	54,4
Salts,	2,0	10,0	3,0	2,5

To make the differences in the above analysis more easily appreciated, I have reduced the several items to their relative proportion in 1000 parts of blood, as follows, viz:

	Blood in the Left Ventricle in 1000 parts.	Blood from the Iliac Artery in 1000 parts.	Blood from the Iliac Vein in 1000 parts.	Bloom from the Renal Vein in 100 parts.
Water,	812,0	812,2	811,9	803,4
Red-Corpuscles,	81,8	82,5	92,7	92,2
Fibrin,	2,1	2,2	2,5	1,7
Albumen (fat and extractive matter not separated,)	99,4	98,1	89,5	98,5
Salts,	4,7	5,0	3,9	4,2
	1000,0	1000,0	1000,5	1000,0

The very slight variations exhibited in the columns representing the two specimens of Arterial blood, are doubtless owing wholly to the slight inaccuracies incident to all analytical processes. But the difference between the two specimens of Venous blood, or between either of them and the Arterial, are striking and highly important. Thus the blood from the Illiac vein, returning mostly from a muscular and non-secreting part of the system, exhibits a higher proportion of *fibrin* and red-corpuscles, with a much lower proportion of albumen,

than the Arterial blood; while that from the Renal vein, returning from an organ secreting copiously a highly nitrogenous liquid, exhibits a marked diminution in the proportion of *fibrin* and water, with an increase of red-corpuscles, the albumen remaining the same as in the blood from the arteries. These results so well correspond with those obtained by Simon, as already quoted, that but little doubt can be entertained of their correctness. And they point, with a force little short of actual demonstration, to the conclusion *that the fibrin of the blood is the direct result of the waste or metamorphosis of the organized tissues*, finding its exit from the system in the nitrogenous constituents of Urine, Bile, &c., instead of being the most perfectly assimilated agent destined for nourishing such tissues. Indeed, how else is it possible to explain the fact that the blood returning from an active excreting organ, like the kidney, contains less fibrin than arterial blood, while that returning from non-secreting or chiefly muscular structures, where we should suppose the greatest amount of fibrin would be used up if it were nutritious, contains a proportion exceeding that sent through the arteries to the same structures? The conclusion thus arrived at from analysis of the blood returning from different organs and tissues, also affords a far more satisfactory explanation of the increase of fibrin in diseased conditions of the system, than has been afforded by any of the more commonly received doctrines in regard to that constituent of the circulating fluids. Thus if we grant that the fibrin is derived from the decay or waste of tissues, instead of constituting assimilated matter for their nourishment, its accumulation in the blood in all inflammatory diseases, when the supply of food is cut off, the tissues wasting rapidly, and, at the same time, the nitrogenous excretions diminished, is easily understood. So, too, its existence in a full or even excessive proportion, in Aenemia, Phthisis, or any other morbid state characterized by an active capillary circu-

lation and a predominance of the decomposing or wasting process over the nutritive, is explained with equal facility. This conclusion also explains why the Urea appears as a constant and uniform ingredient in the Urinay Secretion, under the influence of all classes of diet, and even while life continues, after all diet is discontinued, and yet can never be detected during health in quantities above a mere trace in the blood itself. If the fibrin is derived from the waste of tissues, and is excreted in the form of Urea and other nitrogenous constituents of the excretions, we should, a priori, expect such excretions to continue, not while this or that diet was continued, but so long as the organized structures continued to undergo metamorphosis, and the secreting organs themselves continued in a condition to act. And such, observation long since demonstrated to be the fact. I do not wish to convey the impression that diet and drinks exert no influence over the quantity or quality of the urinary secretion, but only that the nitrogenized constituents, especially the Urea, "may fairly serve," to use the language of Dr. Carpenter, "as a measure of the *waste* of the tissues."

The foregoing view of the origin of fibrin also serves to explain the diversity of results which have been obtained by experiments on comparing analytically Arterial with Venous blood, the fibrin being found to predominate sometimes in one and sometimes in the other;—such differences depending undoubtedly on two circumstances, viz: first, the particular vein from which the blood was taken for analysis; and second, on the comparative activity of the *nutritive* and *disintegrative* processes.

If it was the object of this paper to propound any general doctrines, except such as strictly belong to the experimental inquiries above detailed, I should indicate the several steps of assimilation and nutrition by the formation first, of albumen; second, white corpuscles; and third, organized tissue.

While the steps of disintegration or decay, so far as the nitrogenized constituents are concerned, are, first, the formation of fibrin and extractive matter; and second, the various nitrogenized constituents of the excretions.

The generally received doctrine of the formation of all organized structures from cells, and the part which the white corpuscles play in the reparation of injured parts, constituting what M. Travers styles "*the new lymph-bed of organization*," as seen under the microscope, all tend to sustain these views. But it is no part of my present purpose to enter upon a discussion of these interesting topics. And I would by no means present this paper to the profession, until the experiments herein had been further corroborated by repetition and extension, did I not hope that by so doing others would be induced to enter experimentally the same field of inquiry.

ARTICLE III.

A Case of Sciatica treated successfully by Inoculation with Sulphate of Morphine. By CHARLES BRACKETT, M. D., of Rochester, Ind.

The following, if you think proper, you may publish. It is concerning a case of Sciatica, (I like the shorter, and full as expressive term, in lieu of the Neuralgia Femero-Poplitæ,) of long standing, which I treated by inoculating the skin over the course of the nerve with Sul. Morphine, made into a thin paste with Croton Oil.

This was a case of some years duration, and had been treated in this country and New York without an appearance of benefit.

The patient, Wm. R., aged about fifty years, of a spare

habit but large and muscular frame, and active disposition, had suffered for the past ten or fifteen years with occasional rheumatic attacks, affecting generally his upper though often his lower extremeties and back. The pain, and weakness in his back, and in the course of the sciatic nerve for the past two years, had been persistent, so that he needed the aid of a cane when walking; for the past few months he had been confined to his bed, suffering such pain as only the victim of Neuralgia has a knowledge of. I had tried most of the medicines which I thought could give him relief, both in the form of internal and external medication; at length I concluded to try this plan of inoculation, although I had not a remote idea of deriving *permanent* benefit from it, yet I could not bear the idea to give him up to the perpetual use of morphine, from which alone in large doses he found relief.

I began about the origin of the nerve, and inoculated the paste above mentioned about every four inches, down to his heel, which was as far as he felt any pain. That night he rested better than he had for a long time previously, the pain being entirely removed along the track of the inoculations; towards morning the pain attacked the Anterior Tibial Nerve, where previously it had never existed, and where it became as acute as ever it had been on the posterior part of his leg. I followed this pain up with my scarifications, putting in as much of the paste as I dared do in from four to six punctures made with the point of a thumb lancet at each place of inoculation. At this time I made my points of inoculation about three inches apart from the knee to the middle of the dorsal surface of the foot, so far as the pain existed; it ceased, and at my next visit it had appeared in the Plantar Nerves. I scarified and inoculated the sole of his foot, and from that time till his death he never suffered from any pain about that leg.

This patient, a robust Virginian, suffered more I think than

any one I ever saw. Judging from his appearance, I thought it must be truly *perfect agony* he suffered.

He lived about a year after the cure of his Neuralgia, when he died from complicated disease of the Spleen and Liver, chronic in its character. As a *post mortem* was not allowed, I cannot give the exact condition of the viscera.

Though there is nothing remarkable about this case as respects the originality of its treatment, which I do not claim for it, yet the rapid and almost magical effects of the inoculation, together with the total and permanent disappearance of the neuralgic disease, I think probably ought to place it among the first remedies to be used in this disease, the treatment of which (through necessity from an absence of a knowledge of its existing causes) so often assumes an empirical tendency. At any rate it is to be considered a valuable adjuvant to other treatment.

ARTICLE IV

External Application of Chloroform in Erysipelas.

[For the following, communicated in a letter from Alfred L. Castleman, M. D., of Wis., we return our thanks, and hope our readers may be favored with frequent communications from his pen.]

I have this morning read in the N. W. Med. and Surg. Journal an article, accredited to the Ohio Med. and Sur. Journal, on the "*Accidental* employment of Chloroform in Erysipelas." As the cases cited here are too few to give the remedy much weight in the treatment of the disease, I wish to say that for some months I have used it (though not accidentally)

in the treatment of this disease, and in every instance with the most marked benefit. I at first used it combined with Olive Oil, in the proportion of three parts chloroform to one of the oil. I now, however, use it pure, unless in cases where there is much pain, when I add a little Sulp. Morphine.

I do not recommend the use of Chloroform to the profession as a remedy to be relied on in the treatment of Erysipelas. My experience in the use of it is yet too limited, and medical men cannot be too careful in bringing forward new remedies on *slight* evidence of their remedial power. I should not have made this communication but for having seen the one above referred to, and with the hope that it may call forth in your September issue any further evidence that can be adduced on this point.

June 21*st*, 1851.

ARTICLE V.

Extraction of Child by a Novel Process.

[Dr. Samuel Thompson sends us the following:]

I reply to an application for facts on Obstetrics for the Committee of the American Medical Association, I received from Dr. A. E. Ames, of Roscoe, the following. It came too late for its intended object—it is at your service:

"Mrs. H., in labor with 10th child; in labor 7 hours; pains very hard, progress slow. First presentation of Baudeloque; previous to labor, the labia majora and minora had become some swollen, and as labor progressed the swelling increased, in consequence of the enlargement of the parts.

The child's head being very large, completely filling up the pelvic region, and there being no prospect of a natural termination of the labor, and it being impossible to apply the forceps, I determined to perform craniotomy. After having made an incision through the scalp 2½ inches in length, I raised the scalp and passed two fingers of my right hand under it far enough that when I made extension the force would not come against the edges of the incision; then placing my left hand against the perinæum, I made extension with my right. This had a tendency to elongate the head of the child, and aided by the pains, which were very good from the first, the child was born alive. The wound was dressed with simple dressings.

Thus may a child, in my opinion, be saved. This may not be a *new act* in Obstetrics; if it is, please place the same before the public eye. A. E. Ames.

March 20th, 1851.

ARTICLE VI

The Uses of the Chloride of Sodium, with Notes of Cases Treated in the Illinois General Hospital. By W. B. Herrick, M. D., Prof. of Anatomy and Physiology in Rush Medical College, and one of the Surgeons to the Institution. Reported by H. A. Johnson, A. B. and Interne.

During the spring and summer, about ten cases of well marked Intermittent fever have been treated in the Hospital by the use of Chloride of Sodium. There have also been several cases of Typhoid Fever treated by the same article. So far as it has been tried, it seems to possess valuable med-

icinal properties, and if future experiments should confirm the results already obtained both here and elsewhere, we may expect that in intermittents the use of Quinine will soon be superseded by this simple and cheap remedy. The observations already made are not, perhaps, sufficiently numerous to warrant a definite conclusion in regard to this agent, but in order that others may be induced to try it, the two following cases are presented.

Case First.—R. S., an English laborer, aged 21, was admitted to the Hospital June 18th. About two months since he began to feel unwell, had head-ache, pain in the back, giddiness upon rising suddenly, with chill and fever; during the last week has had an ague fit every day.

Upon examination, the tongue was found covered with a light, yellowish fur; the bowels somewhat constipated; but very little appetite; pulse small and weak; skin cold, moist and dark; conjunctiva yellow; the spleen much enlarged, with tenderness upon pressure over the region of that organ; the general appearance of the patient indicated debility.

Prof. Herrick remarked, that this case presents us with a complication very often seen. The enlargement of the spleen is the result of the congestion of that organ, repeated with the occurrence of each chill. The first indication then, is, to arrest the exacerbations. This may be done either by making an impression on the nervous system, according to the general explanation, with Quinine and Opium, stimulating it to overcome the habit into which it seems to have fallen, and thus restoring an equilibrium to the circulation, or by attending immediately to the vascular system, improving the quality of the blood, so that it may be more efficient in removing from the system effete and morbid matter, the presence of which, it is believed, gives rise to the disease before us. In accomplishing this, we shall succeed best by introducing substances to prevent the further destruction of the globules of

the blood, and at the same time furnishing the materials for the manufacture of a fresh supply of this constituent. If this can be effected, we may confidently expect, not only that the priodicity of the disease will be broken up, but that, the cause being removed, the disease itself must yield; and the system, instead of being depressed by the chemical or physical forces, must assume its wonted vigor, in obedience to the vital force, and in accordance with the laws of life. Chloride of Sodium is known to possess the property of preserving the blood globules; it is an alterative and tonic, and is also claimed to possess a specific influence in arresting the exacerbations of Intermittents. We have used it in several cases, and always with the most complete success. ℞ Chloride of Sodium ℥jj, in mucilage of Gum Arabic twice daily.

June 19. Had no chill since taking the Chloride of Sodium, feels much better, no head-ache—continue treatment.

June 22. Had a slight chill Friday, the 20th, but has felt well since; appetite begins to improve, tongue clean, tenderness over the region of the spleen much diminished, and some reduction in the size of that organ. Dr. H. remarked, that the disease might be considered as broken up. The only remaining indication, is to build up the system by the use of tonics and agents that favor the introduction of nutritious materials.

℞ Chlo. Sodii gr. X.
Ferri. Carb. grs. V.
M. Sum. three time daily before eating.

℞ Acidum Nitricum f℥i.
Acidum Muriaticum f℥ii.
Aqua. Dest. f℥i.
M. Sum. gtts. X in water after each meal.

June 25. Has had no return of chill. Appetite good, size of spleen very much reduced, strength gaining, no indications

of disease. The patient was discharged, and from this time we lost sight of him.

It will be observed that in treating this case no Quinine, Opium, Arsenic, or Strychnia was used. The Chloride of Sodium arrested the paroxysms as promptly as Quinine in ordinary doses, and the system speedily recovered its strength and vigor under the use of that agent, combined with Carb. of Iron and mineral acid. From ℥ii to ℥iii may be given to an adult without producing any unpleasant effects.

Case Second.—Mrs. R., an English woman, aged 30, was admitted to the Hospital June 18th. Her constitution has been robust, and her previous health good, until about three weeks since, when she become unwell, complaining at first of langor and depression, with slight chills and fever, followed in the course of a few days by diarrhœa, and still later by vomiting. At the time of her admission into the Hospital the tongue was dry, and red on the edges, with a dark crust along the centre; the teeth covered with sordes; intense thirst; some vomiting and diarrhœa, with some tenderness over the epigastric, and the right and left hypochondriac regions; the pulse small and weak; some pain in the head; a disinclination to motion of any kind, and extreme nervous prostration.

In the absence of Prof. Herrick, Prof. Evans prescribed for the case. He remarked that the case was of a Typhoid character, requiring careful and judicious nursing, with the palliation of aggravating symptoms, rather than active and energetic treatment.

The most urgent symptom of the case before us, is vomiting, which is attended with much acidity of the stomach. To correct this ℥i of Bi. Carb. Soda was ordered to be dissolved in f℥i of water, a table spoonful to be given every fifteen or twenty minutes until the acidity was corrected or the vomiting ceased. In addition, the patient was ordered to take mutton broth, strongly seasoned with Chloride of Sodium.

June 19. General appearance somewhat improved; tongue not as dry; vomiting ceased very soon after commencing the use of the Bi. Carb. of Soda; slept well during the night. Prof. H. prescribed Chloride of Sodium gr. x three times daily, Quinine gr. v at night, with the mutton broth as yesterday.

June 20. Still improving; continue treatment.

June 21. The bowels have not moved since day before yesterday; the tongue begins to be moist, and the black coat breaking up. Ordered Pil. Hydrarg. grs. v, this morning; continue the Chloride of Sodium and the Quinine.

June 23. Tenderness of the bowels entirely removed; evacuations regular and natural; appetite improving; pulse full and soft; continue the treatment.

June 26. The improvement since the last date has been constant and rapid. The patient is able to walk about the ward with ease, feels perfectly well, has a good appetite, and complains only of fatigue after exercise. She was discharged with directions to keep quiet for a few days, take a good nourishing diet, and use an abundance of *salt*.

To give in detail the Professor's views in regard to the modus operandi of Chloride of Sodium, in cases like the above, would require more space than we feel at liberty to occupy. Its use in Typhoid cases may be regarded as a modification of the Alkaline treatment. This salt is selected, not only because it prevents decomposition of the blood, but also from the fact that in that disease, as well as Pneumonia, the chlorides in general, and especially of Sodium, are deficient in the excretions. It is hoped that others may be induced to try it, marking carefully its effects upon the system, whether favorable or not, in order that its true Therapeutic character may be determined.

ARTICLE VII.

On the Use of Cod Liver Oil in Nursing Sore Mouth. By Jno. Evans, M. D. Prof. of Obstetrics, &c., in Rush Medical College.

The extensive prevalence in the West, of a form of disease in women, generally attending the period of lactation, which has in consequence acquired the name of "Nursing Sore Mouth," and the general want of satisfactory success in its treatment, have induced me to give the result of my observations upon its nature and management.

The disease generally affects females of delicate constitution and spare habit, in which the function of assimilation is but imperfectly performed. It not unfrequently makes its appearance in such during the last months of gestation, but much oftener during the period of lactation.

The diagnostic symptoms are a burning sensation in the mouth, as if it had been scalded, which is greatly aggravated by hot drinks, attended at first by but little redness, and followed by small ulcerations upon the tongue and different parts of the bucchal cavity. In some cases, instead of these ulcers, there is a diffused redness of the mucous membrane of the mouth. These symptoms are generally attended and often preceded by a burning sensation in the stomach, pyrosis, indigestion, and occasionally vomiting. The bowels are most frequently relaxed, and in some cases an obstinate diarrhœa attends.

The course of the disease is often variable, sometimes for a few days being almost entirely relieved and again recurring. As has been observed by Prof. Brainard, it is often attended by ulcerations in the vagina and upon the mucous surfaces of the labia, which generally grow worse as the irritation of the mouth subsides, and vice versa. The wasting

of the system often continues, if the child is kept at the breast without the function of nutrition being improved by regimen or treatment, until the patient sinks and dies of marasmus and its attendant local lesions.

Nursing Sore Mouth is a disease of debility, consequent upon the marasmus produced by imperfect nutrition and the demand upon the system of gestation and lactation, and generally speedily gets well after weaning the child, unless it has continued so long as seriously to have impaired the function of nutrition. Profuse hemorrhages and copious lochial discharges, favor its development.

Treatment by a resort to medication, especially murcurial, generally aggravates rather than relieves the disease. Although in some instances symptoms may be temporarily palliated by the use of the bitter tonics, and astringents such as Nitrate of Silver, Tannin, &c., I have thought in the end they do more harm than good, as there are few if any of this class of remedies that do not, under the circumstances, ultimately act as irritants. The ulcers in the mouth may generally be promptly, but temporarily relieved, by the application to each of a little pure Muriatic Acid, applied by dipping a small point of a feather or a pencil in the acid and touching it to the ulcerated surfaces. Although they speedily heal after this application, others soon make their appearance, unless the general condition of the system is relieved.

In some instances, after having failed to relieve either the diarrhœa or irritation of the mouth by the ordinary means of treating these symptoms in other cases, I have observed a marked improvement by abandoning medication altogether, and placing the patient upon an animal diet and the free use of mucillaginous drinks.

Observing the influence of Cod Liver Oil in preventing the wasting of the tissues of the body in cases of marasmus, especially from phthisis and tabes mesenterica, it occurred to

me that its influence might be equally beneficial in the disease in question. The diarrhœa and ulcerations of the mucous surfaces being in many cases similar to those produced by the marasmus in those affections. I have accordingly been in the habit of prescribing it taken in French brandy or malt liquor, as might be found best suited to the taste or most convenient, and generally with the happiest effects. Where the patient can be induced to continue its free use, it has uniformly proved beneficial, and in most instances effected a cure. If treatment should fail to relieve the disease, a resort to weaning the child should never be deferred until the patient loses her strength so that she cannot maintain the erect position.

ARTICLE VIII.

Address, on the Remedial Properties of Alimentary Substances, and the Changes produced by Oxygen in Health and Disease. Delivered before the ILLINOIS STATE MEDICAL SOCIETY. By W. B. HERRICK, M. D., President of the Society, Professor of Anatomy and Physiology in Rush Medical College, &c., &c.

[Taken from the transactions of said Socieety.]

GENTLEMEN:—

This, the first annual meeting after that for the organization of the Illinois State Medical Society, is an occasion of great interest and of much importance.

It is interesting, from the fact that the nuber here present furnishes abundant evidence of the continued growth and prosperity of an organized body, the noble object of which is to combine and render efficient in action the talent and enterprise of our medical men, and to cherish among them feelings of brotherly love and friendship. Importat, because our present meeting furnishing, as it does, the only opportunity which has ever been offered for the united action of any considerable number of our physicians, must, to a certain extent, give character, both at home and abroad, to the medical profession of our State.

The principal object of an organization like ours should be, doubtless, to furnish a medium through which medical men can reciprocally make known to each other the results of their individual observation and experience, in order that the knowledge acquired by each in their respective localities, may here become the common property of all. With the view of sustaining my part in the performance of this common duty, and in compliance with a requisition in the constitution of this Society, requiring me to deliver an address at the expiration of my term of office, I will now endeavor to perform this, a pleasant task, generously assigned me by your partiality and kindness.

On an occasion not long since, upon which I had the honor of addressing the public in behalf of our profession, it was stated as my opinion, that "the time is not far distant when the truly scientific physician will use as remedies such substances only as help to constitute in health the solids and fluids of the body."

We had arrived at this conclusion after mature reflection upon the present state of our science, and after having observed a tendency on

the part of both writers and practitioners of the present day, to regard the manifestations of disease in the human body as evidences of want of harmony in the performance of functions consequent upon excess or deficiency in some of its parts or elements which may be, and are often, more promptly restored by the addition or abstraction of one or more of its normal and proper constituents, rather than by introducing into the system, powerful and even poisonous foreign substances.

Believing, as we do, that this is the truly scientific and rational view to take of disease, and remedial agents, and that the spirit thus manifesting itself is one of improvement, indicating the approach of a new era in the study and practice of medicine, we propose on the present occasion to lay before the Society our views of the nature of certain chemico-vital changes, and of the modus operandi of certain medicines with the view of showing, what we firmly believe, that a majority of diseases may be cured more certainly and promptly by the use of properly chosen alimentary substances than by the administration of powerful agents under the false name of remedies; and that the animal oils—lemon juice, common salt, soda, &c.—are valuable and effective medicines, capable of restoring health in some of the worst forms of disease; and that in view of certain changes in the body, especially such as are effected by the oxygen of the air, the physiological reasons for their action, and pathological indications for their use, are plain and rational.

The views expressed by most physiological writers concerning the changes resulting from the action of oxygen in the animal body are, to say the least, vague and unsatisfactory.

According to the genarally received opinion, it is taken into the system for the purpose of being combined with the nutritious materials derived from food, to form the more highly organized and perfectly animalized constituents of the blood and tissues.

In opposition to this view, we contend that digestion and respiration are antagonistic in their functions; that the most highly elaborated nutritious substances may be derived directly from food, in a form suitable to enter at once into the constitution of the most perfect organs; and that all the constituents, both of the blood and tissues, by uniting with oxygen, are passing continually into less perfectly organized forms, and hence that oxygenation is a destructive, rather than a vitalizing process. To use the words of B. Jones, "a change of one substance into a higher compound never occurs, but everywhere in the stomach and system lower compounds are each moment forming, and this chiefly for

the purpose of solution." All the phenomena, both of healthy and diseased action, are more fully and satisfactorily explained by thus considering oxygen the agent by means of which organic matter is reduced and ultimately separated from the body, as it is well known it is, in the form of carbonic acid, urea uric, acid, &c., all highly oxygenized compounds.

According to the views of Prof. Liebig, certain constituents of the food, known as the non-nitrogenized or carbonaceous, are taken into the system for the purpose, principally, of gererating animal heat, by their union with oxygen; whilst others, the nitrogenized or albuminous, furnish mainly nutriment for the organs and tissues.

Admitting the correctness of these views, it is evident that in case of deficiency of carbonaceous substances with an excess of oxygen in the system, the changes which would be most likely to occur would be of such a nature as to give rise to a class of diseases characterized by excessive oxydation, whilst an opposite condition as regards the relative proportions of oxygen and oxegisical materials might produce other affections no less numerous, in which defective oxidation would be the leading characteristic.

Among those belonging to the first class are, as we believe, all highly inflammatory affections—such as Pneumonia, Pleurisy, Croup, &c., together with Rheumatism, Tubercular disease, and most affections of the skin, all of which are most common and severe in high northern latitudes, where a dense and dry atmosphere favors excessive oxidation; and of an opposite character to those which prevail in the south, where the rare and humid air, deficient in oxygen, gives rise to Yellow, Remittent and Intermittent fevers, Jaundice, malignant Erysipelas, &c., in which there is doubtless an accumulation of unoxidized effete matter in the blood and tissues.

The physiological and pathological facts which might be adduced in support of the above conclusions, are too numerous to admit of being presented on the present occasion. The most we can hope to accomplish at this time, is to give a few reasons and present some facts, such as may serve to direct the attention of medical men to the subject, and show practitioners the propriety of depending more upon remedial agents, which modify in health these changes, and which are therefore not destructive, but congenial to life.

All inflammatory affections are, according to our views, attended by

excessive oxydation. This is evident from the increased amount of carbonic acid exhaled, and the constant accumulation in the blood, during their progress, of highly oxygenized compounds, such as urea, uric acid, fibrine, &c. The most remarkable characteristic of this class of diseases, is the constant and rapid increase, during their progress, of the fibrine of the blood. This substance, according to most physiologists, is the more highly organized constituent of this nutritious fluid, formed from its less perfectly animalised ingredient albumen; whilst others, on the other hand, contend that the latter substance as compared with the former, is the most important, and that fibrine of the two, is the most nearly allied to effete matter. The latter opinion is doubtless the correct one, as is evident for several reasons, among which may be mentioned the facts, that fibrine is not an ingredient of the highly nutritious compound provided by nature in the albuminous egg; neither does it enter, in any considerable quantity, as compared with albumen, into the constitution of healthy blood—whilst it accumulates rapidly during the progress of diseases in which there is defective action in the assimilative and excretive functions.

In support of this view we have also the analysis of Muuler, who found more fibrine in the oxygenized arterial than in the carbonized venous blood. The experiments of Marchal, showing an increase of this element in blood drawn from a vein under the influence of heat, such as would favor oxidation; those of Becquerel, by which it appears that albumen diminishes rapidly during the progress of diseases, such as Pneumonia, Pleurisy, &c., in which fibrine increases; and the fact stated by Hassall, in his Microscopic Anatomy, of the human body, where it is asserted that "the true cause of the fatality which has so often attended the operntion of transfusion, depends upon the difference which exists in the qualities of the fibrine in the blood of two different animals, or even of two distinct individuals. This is shown by the fact that the transfusion of blood deprived of its fibrine, is never followed by the serious results to which reference has been made."

Hence we conclude that fibrine is like most other morbid constituents of inflammatory blood, a deleterous compound resulting from excessive oxidation consequent upon causes favoring chemico-vital changes, and that one of the most important indications in the treatment of all inflammatory affections, is to prevent oxidation and the accumulation in the blood of oxygenized substances.

Taking this view of the subject, we can explain more easily and phe-

losophically, the modus operandi of the remedial agents, which have been found by experience, to be most efficient in this class of diseases.

The amount of oxygen taken into the system, is always in proportion to the number of globules in the blood, as has been shown by numerous experiments; hence it is that venesection, by diminishing the number of these globules and consequently the amount of oxygen in the circulating fluids, diminishes also its power of acting upon the blood and tissues, and thus becomes in the hands of an eastern physician treating the pure Pneumonia, such as occurs in the dense atmosphere and plethoric patients of New England, one of the most prompt and efficient remedies. Whilst here in the West, where this disease is more or less complicated and mixed with those of an opposite class, the miasmatic, the practitioner, who by frequent bleedings, should abstract globules from the impoverished and carbonized blood of his pneumonic patient, would be treating a name, rather than the disease. In all inflammatory affection the rule should be, doubtless, to avoid blood-letting wherever there is a tendency to miasmatic or other diseases, in which there is defective oxidation, and to use it boldly, in cases of an opposite character, in which the blood rich in globules contains no excess of carbon.

The action of Opium, another very efficient remedy in inflammatory affections, can also be made to harmonize with our views; for it must be admitted by all, that in proportion as respiration and the circulation are made sluggish by its use, the changes resulting from oxydation would be less rapid and extensive, and experience shows that its action in subduing this class of diseases is more or less marked, in proportion to its effect upon these functions.

In all cases of local inflammation in which there is impoverished and carbonized blood, as in Billious Pneumonia, Heapatitis, Sub-Acute Gastro Enteritis, and similar diseases of the West and South, opium is by far a better remedy than blood-letting; because, by acting in the manner above stated, it lessons the excessive local oyxdation of albumenous compounds without depriving the blood of its globular element required in such cases during convalescence for the oxydation and elemination of carbonaceous materials. Hence the difference of opinion among physicians as to the comparative value of these two remedies.

The affections in which treatment with the view to prevent oxydation is plainly indicated, and most efficient, are those of the skin, resulting either from injury or from other causes. This is evident from the well known fact, that remedial agents which most effectually exclude the at-

mosphere from abraded, diseased or injured surfaces, are the best local remedies in such cases. Hence it is that such applications as Collodion and Gutta-percha, prevent the pitting in small-pox, stop the spread of mild erythema, favor the union of wounds, and subdue measurably the pain and inflammation of blisters and burns; and hence it is that inunction with fats and oils has been found, both in this country and in Europe, one of the best means for allaying the heat and irritation in Scarlitena and Rubeola.

Excessive oxydation of the important constituents of the body, according to our views, may result either from an excess of oxygen, or from a deficiency of hydro-carbonaceous substances, requiring in the one instance the exclusion of oxygen, and in the other the introduction into the system of oxydisable materials. All purely inflammatory affections belong doubtless to the first class, and are therefore threated properly when we protect highly inflamed surfaces from the atmosphere, or abstract blood, and thus lessen the amount of oxygen taken into the system by diminishing the number of its carriers, the globules; whilst those of less active nature, such as Phthisis, Tabes Mesenterica, and the like characterized by defective nutrition, require a good nutricious, albuminous diet to serve as nutriment for the broken down organs and tissues, together with an abundant supply of respiratory food, such as will by its affinity for oxygen, prevent most effectually the further excessive oxydation of the more important constituents of the blood and tissues.

In support of these views, of the effect of hydro-carbonaceous compounds in preventing the destructive oxydation of the albuminous constituents of the body, we have the experiments of Dr. Brecker, showing that the use of sugar, alcohol, wine, &c., diminishes the amount of lithates, phosphates, and other animal excretive matters in the urine; also the fact stated by Dr. Chambers, that the use of food constituted principally of fats and oil, reduces the amount of nitrogenized constituents in all the excretions.

From the above facts, we learn why it is that compounds such as Cod Liver Oil, constituted principally of carbon and hydrogen, are of all others the most useful remedies in diseases in which there is an impoverished condition of the blood, resulting either from excessive oxydation, morbid action, or defective nutrition.

It was our intention to give in this connection, a history of a few of the most important cases treated by myself and others, with the view to prevent oxydation in the manner above stated, by the use of Cod Liver

Oil. But we find that such details cannot be entered into in the limited time allotted to us on the present occasion, and that we can only state what we know from personal observation and experience, that for all chronic affections characterized by defective nutrition, such as Tuburcular Disease of the Lungs, and Mesenteric and other Glands, Chronic Bronchitis, Tumefaction and Ulceration of the Throat or Tonsils, Scrofulous Opthalmia, &c., the Cod Liver Oil is by far the best and most efficient remedy known, especially when used in connection with exercise in the open air, and a good nutritious diet, to the exclusion of cathartics, calomel, and other debilitating agents, worse than useless in this class of diseases.

The organic acids constitute another class of simple, yet in many cases active remedies, nearly allied to the animal oils, both in their application and mode of action. This is what might be anticipated in view of the following facts, stated by Prof. Liebig, in his recent work on the Chemistry of Food: "From analysis," says he, "it appears that the non-nitrogenized acid, occurring in the animal organism, is identical with the acid formed in milk when it becomes sour, and into which sugar of milk, starch, grape sugar and cane sugar, are converted by contact with animal substances in the state of decomposition." Concerning the use of this acid he says: "The urine of healthy men, which has an acid reaction, contains no lactic acid, and no substance from which lactic acid can be formed during putrefaction of urine." * * "From this it plainly appears, that the lactic acid, in the organism, is employed to support the respiratory process, and the function performed by sugar, starch, and in general all these substances which in contact with animal matter, are convertable into lactic acid, ceases to be an hypothesis. These substanees are converted, in the blood, into lactates, which are destroyed as fast as they are produced, and which only accumulate when the supply of oxygen is less, or where some other attraction is opposed to the agency of that element."

In view of the above facts, it is evident that the use of the organic acids, especially the lactic, is indicated in diseases such as Rheumatism, Gout, &c., in which there is an excess of lithic, oxalic, and other excrementitious acids, as the effect of a too rapid conversion of the nitrogenized constituents of the blood and tissues into these highly oxygenized compounds.

The indications in the treatment of such cases are doubtless first, to prevent the too rapid formation of these compounds, by the use of a

remedy—an organic acid for instance—which by its affinity for oxygen will most effectually prevent its excessive action upon the more important constituents of the blood and tissues; and secondly, to remove from the system these deleterious substances by the administration of an alkali which, by its union with the lithic and other acids, will produce soluble salts, such as can be more easily and readily taken up and discharged by the kidneys.

This two-fold object may be accomplished in some cases by the administration of salts, containing both the acid and the alkali, such as Tartrate of Potasa, or Lactate of Soda, and in others by the use of either the acid or alkali, according to the indications. Hence it is that the saline, alkaline and acid treatment for rheumatic affections, have each in turn had their advocates. It is a fact worthy of ote, that our views are sustained by two classes of writers, apparently opposed to each other—one contending for the alkaline, the other for the acid treatment of Rheumatism. Concerning the alkaline treatment, we find the following statement in a report of the treatment of disease in King's College Hospital, London :

"An unusual number of cases of Rheumatic fever have lately been admitted into Dr. Budd's ward; we noticed no less than six at the same time; with all of whom the alkaline treatment was successfully employed." This treatment, we may remark, consisted in the free use of bicarbonate of potash, both internally, and as a lotion upon the surface of parts affected.

Upon the use of organic acids, a recent number of the London Lancet contains the following statement, under the head of "Acute Articular Rheumatism treated with Lemon Juice."

"At Guy's Hospital, Dr. G. Owen Reece has introduced a method of treatment which amply deserves notice, both on account of its great simplicity, and the success which has attended it." In a subsequent number of the same periodical, Dr. Reece himself says in regard to this treatment: "My continued experience has but the more persuaded me, of the great value of Lemon Juice as a remedy for Rheumatism. Its action is sometimes most remarkable, causing cessation of pain and decrease of swelling and redness, such as we can rarely obtain with colchicum, even when administered in large and hazardous doses."

Should this simple medicine stand the test of time, as we believe it will, so as to enable the practitioner to avoid half poisoning his patients

with colchicum, stupefying them with opium, or enervating them with calomel, a great boon will be conferred upon the consciencious physician, and upon suffering humanity.

Our views of this disease harmonize fully with those entertained by my colleague, Dr. Blaney, to whom is due the credit of having first suggested the use of Lactate of Soda, as a remedy for Rheumatism, with the view, as we suppose, of affecting directly or indirectly the removal of comparatively insoluble compounds, as for instance the phosphate of lime, by the production of two more soluble salts, such as the lactate of lime and phosphate of soda.

Another explanation of its mode of action which might be adopted is, that the lactate of soda constituted of an acid always present in the juice of flesh, combined with an alkali never absent from the blood, furnishes the two normal constituents which are deficient and therefore needed in this class of diseases; the lactic acid to combine with oxygen to form carbonic acid and water, and the soda to unite to form salts with the excess of acids, and thus destroy their deleterious properties and favor their excretion.

Whatever the true explanation of its mode of action, there can be no doubt of the value of this remedy in rheumatic affections, as might be shown, if time would permit, by the history of several cases treated by myself and others—one in particular under the care of Dr. Bird, which had remained unyielding under the most approved methods of treatment for years, was to all appearances permanently cured by the use of sour milk neutralized by the carbonate of soda.

Thus far we have endeavored to show that certain diseases are to be treated with the view to prevent oxydation, and that many of the remedies which have been found most efficient in effecting this object, are simple and common, composed frequently of substances, the absence of which in the blood and tissues, constitutes the pathology of the disease.

We will now present our views of the nature and treatment of another and opposite class, the pathology of which is, as we suppose, defective oxydation and an excess of carbonaceous material in the blood and tissues

The miasmattic diseases, such as Yellow, Billious, Remittent and Intermittent fevers, belong to this class, as we believe, for the following reasons. They originate always, in localities and under circumstances least favorable to oxydation, such as low, damp situations, covered with an atmosphere, saturated with moisture, and constituted in part of carbonic acid, sulphuretted and carburetted hydrogen, and other gases such

as deteorate the air, both by their poisonous qualities and by their affinity for oxygen. The effect of such an atmosphere in preventing due oxydation, and hence the elimination of carbonaceous and other excrementitious matter, is made evident by the dark and sallow complexion of miasmatic patients, by post mortem appearances and by chemical analysis. So too the Symptoms, especially those indicating nervous derangement, are such as would naturally result from sluggish and irregular action of the brain and nerves, for want of a proper interchange of constituents by destructive oxydation and reparative deposition, without which no organ can properly perform its functions.

That this is true of the nervous system is proven by the well known fact, that the phosphates derived principally from nervous tissue are in excess in the urine during the progress of inflammatory affections of the brain or nerves; whilst on the other hand, there is a deficiency where defective mental and nervous action is indicated by a torpid intellect and blunted sensibility, facts clearly indicating that in one class there is excessive and in the other defective oxydation of nervous tissue.

As additional evidence of the correctness of these views, we will state that to our mind, many physiological as well as pathological phenomena, are more fully and satisfactorily explained by thus viewing cerebral and nervous action, as coincident with, if not dependent on oxydation.

The most remarkable characteristic of the nervous system, is a periodical tendency to action and repose, resulting evidently from circumstances which produce at one time a more, and at another a less rapid interchange of its constituents, causing the mind to vibrate with the regularity of a pendulum, between the activity of day, and the forgetfulness of night.

In order to explain the physiology of sleep, we must take into consideration the fact that during the day, a comparatively large amount of the inspired oxygen is required to sustain the action of the muscles, brain and nerves, and hence less is left free to combine with carbonaceous materials, which, therefore, go on accumulating till ultimately when night comes, their affinity for oxygen (being as in many other instances in proportion to quantity) is stronger than that of the albuminous compounds of which the nervous and muscular tissues are principally constituted; hence there is temporary suspension of mental and muscular action in the form of sleep; until, by the continued oxydation and elimination of this respiratory food it is reduced again to the point compatible with renewed mental and bodily action. The light and

heat of day, which in favoring chemical action, have an opposite effect to that of the low temperature and darkness of night, influence doubtless these changes, but to what extent remains to be determined by future observation and experiment.

It would be an interesting and important point to determine, how far the above explanation of physiological phenomena would apply to certain pathological manifestations, such for instance as the periodical tendency to alternate excessive and defective action in Miasmatic Fevers, Intermittent Head-ache, Neuralgia and the like. If for instance it can be shown, that the cold stage of an ague, is but the effect of an accumulation of carbonaceous and other oxydable matters to such an exten as to suspend for a time the healthy action of the brain heart and blood-vessels, and that the subsequent febrile excitement is an effort of nature to throw off this superabundance of such matter, by temporary excessive chemical action, it follows that in this and all other diseases of the same class, the object of treatment should be to favor oxydation.

That this is in fact the true indication in the treatment of Miasmatic diseases, is shown by the unusual amount of highly oxydized effete matter discharged from the system during recovery, by the well known curative effects of pure air, and of remedial agents such as Iron, which favor oxydation by increasing the globular element of the blood.

It is more difficult to explain the modus operandi of certain other well known remedies, such as Quinine, Cinchonine, Strychnine, &c.; yet if we take into consideration their chemical nature in connection with cerain chemco-physiological facts stated by Liebig, we can form an hypothesis, which, to say the least, will explain their mode of action better than any other yet offered.

"The blood-vessels and lymphatics," says this author, "contain an alkaline fluid, while the surrounding fluid, that of the flesh, is acid; the tissue of which the vessels are composed is permeable for the one or the other of these fluids. The constant occurrence of Chloride of Sodium and Phosphate of Soda in the blood," (having an alkaline reaction,) "and that of Phosphate of Potash and Chloride Potasium in the juice of flesh," (having an acid reaction,) "justify the assumption that both facts are altogether indispensable for the processes carried on in the blood and in the fluid of muscles."

"It is easy to foresee," to use the words of this distinguished chemest, "that a more exact study of the influence which alkalies, salts, and mineral acids exert on the respiratory process, in the normal state, must

lead to the most beautiful and valuable results, in regard to their employment in various diseases." It is a remarkable fact worthy to be taken into consideration in connection with this subject, that as a general rule the organic acids are the most efficient remedial agents in rheumatic affections, and other diseases of that class, in which, as we contend, there is excessive oxydation; whilst those of the opposite character, as the Miasmatic Fevers, are treated most effectually with the vegetable alkalies, such as Quinine, Cinchonine, &c., either alone or in-combination, not with the organic, but with the inorganic acids.

Whether these remedial agents favor oxydation by combining with, and removing acids, or by what chemists call catalysis, is a question of much physiological interest, but of little practical value, as affecting the general principle which the above facts seem to establish, that alkalies, especially those derived from the vegetable kingdom, are as a class, the proper remedies for the diseases under consideration.

Chloride of Sodium is a well known simple article, in common use, which, with our old notions of heroic treatment, would never have been suspected of possessing medicinal properties, yet modern efforts to devise means by which to avoid poisoning our patients, have resulted in the discovery that common salt may be and is used, for other and more important purposes than that of making food palatable, as will appear from the following statement taken from a recent periodical, concerning the use of this new and simple remedy.

"Prof. Piorry, in reporting to the Academy of Medicine (Paris) upon the proposed use of table salt in intermittent fevers, states that if administered in doses of two table-spoonfulls it will not only arrest the disease, but also exert upon the spleen as marked effect as quinine does. In twelve cases of intermittent fever, the salt uniformly arrested the paroxysms, and lessoned very materially the size of the spleen. The spleen was also found to diminish when the remedy was given, in cases of typhoid fever."

Before meeting with the above, our attention had been called to this remedy, by my colleague Dr. Brainard, who in view of its well known effects in preventing decay and the destruction of blood globules, was induced to administer salt, in some cases of Pneumonia, attended with great prostration and copious brick-dust expectoration. The effect of this treatment in relieving all the unpleasant symptoms, and especially in changing the character of the sputa, was prompt and satisfactory.

More recently other cases of the same, and some of a different char-

acter, have been treated with this remedy in the Illinois General Hospital under our direction, with results equally satisfactory.

A case of Jaundice, for instance, in its worst form, improved rapidly under the use of mutton broth, nearly saturated with salt. Another most unpromising case of an emigrant direct from Germany with ship fever symptoms, improved more rapidly and got well sooner, under this treatment, than any case of the kind I have ever seen of the same severity.

In order to show the importance of this substance as an article of diet, and hence its value as a remedial agent, we will give one other short quotation from Liebig's valuable work on the Chemistry of Food

"In inland countries the food does not contain common salt enough to produce the phosphate of soda necessary for the formation of the blood, then more salt must be added to the food. From the common salt is produced in this case, by mutual decomposition with phosphate of potash, or with earthy phosphates, the phosphate of soda of the blood. That the phosphate of soda is indispensable to the normal constitution of the blood, and that the processes which go on in that fluid cannot be replaced by phosphate of potash, seems to me, to be an opinion justified by the properties of these two salts."

Such being its physiological importance, the conclusion, as it seems to me, is inevitable, that it must be an efficient remedy in certain pathological conditions; such, for instance, as an undue accumulation of acid, for want of oxygen to burn up the lactic, or of soda to neutralize the phosphoric and other acids.

The acids in the blood and tissues, according to the author above quoted, are shared by the alkalies soda, potash, &c., so that the amount of free acid present must stand in a definite relation to the quantity of the base; hence where there is an excess of free lactic acid from defective oxydation, or of others from undue accumulation, common salt may be administered with the view of providing soda to neutralize some and combine with others, to form easily eliminated soluble salts.

It would appear, then, that the diseases in which this remedy is indicated, are those in which there is an excess of acids, and in which a sallow and dark complexion and brick-dust expectoration indicate the escape of the coloring matter of the blood, from ruptured globules; which, as has been shown by numerous experiments, are destroyed by acids, and preserved by saline and alkaline solutions.

We have been thus particular in expressing our views of the action

of the Chloride of Sodium, with the hope that others may be led to try its effects, believing, as we do, that this the most essential perhaps of the inorganic constituents of food, and we may say of blood, will prove ultimately one of the most valuable and efficient of the remedial agents.

In the preceding remarks, we have attempted to combine and harmonize a few of the most important modern discoveries and recently observed facts, with the view principally of showing the importance of having the science and practice of medicine keep pace together, and go hand in hand in the march of improvement, in order that each may by turns support and guide the other through the obscure and intricate path leading in our profession, to knowledge and truth.

Since the discovery of the important relations existing between vegetation and the chemical constitution of soil, no well informed agriculturist would think of bettering the condition or of promotiug the growth of a sickly tree, in any other way than by removing unnatural and exuberent bark and branches, and supplying its roots with an earth containing all the proper constituents for its body and fruit; neither should we with our present knowledge of the dependence of healthy action upon proper nutrition, neglect to apply in practice each newly acquired fact, by which we can the better determine how to harmonize vital action, by adding healthy and abstracting morbid constituents of the body in a manner as near as possible as nature dictates in her unaided and healthy performance of those functions.

Having now occupied all the time we feel at liberty to take on the present occasion, with what is in truth nothing more than a brief and imperfect numeration of a few only of the facts and arguments which might be adduced in support of our views upon several subjects, each of which might properly have claimed the whole of our attention, and having as we trust, to some extent at least, sustained our position, we will now, in conclusion, renew the assertion, that in our opinion the time is not far distant when the truly scientific physician will use as remedies such substances only as help to constitute in health, the solids and fluids of the body.

Even now, the best informed and thinking men of our profession, are beginning to practice in accordance with these views, learning as they are from reason and daily experience, that the best materials with which to repair a broken fabric, are those used in its construction by the Great Master Builder.

Case of Puerperal Convulsions. By J. A. PRESTON, M. D., of Hartland, Wisconsin.

Mrs. ———— was taken in labor Thursday morning, July 24. I was sent for and arrived about 3 o'clock P. M. As the pains were then slight, no examination was made until 5 o'clock. At this time the pains become more frequent and severe, promising a speedy accomplishment of the labor. The os uteri was well dilated, the head presenting in the first position and occupying the superior strait.

The patient, whose age was 28, was primaparous, possessed a well marked nervous temperament, with a strong predisposition to cerebral determination. During the night, the pains continued at quite regular intervals, but were wanting in strength and efficiency. Labor went on well, or at least without any unusual complication, until 2 o'clock Friday morning, when she was seized with a very severe convulsion. So far as I was able to ascertain, there was not the slightest premonition of the phenomena which followed. After using such immediate measures as seemed to me proper, I sent for such counsel as I knew to be provided with forceps. I have a pair of Bedford's beautiful instruments, but the distance to my house determined me to send for the nearest assistance. A second convulsion more severe than the first induced me to decline the hazard of waiting for means which might come too late; I therefore took the responsibility of delivering the child forcibly.

Up to this time my efforts had been directed entirely toward equalizing the circulation. Sinipisms were applied to the feet, ankles and arms, and cold water was poured from a height upon the head. Bleeding did not appear to be indicated, and as it was subsequently practiced without good results, I think no benefit would have accrued from its earlier

adoption. Yielding to the conviction that nothing but immediate delivery would avert a fatal issue, I perforated the fœtal cranium, and delivered without difficulty a dead male child. The result did not justify my anticipations, as the convulsions continued apparently, though probably not really unaffected by the delivery.

Of this part of my practice, I shall attempt no further defence, than the foregoing statement of facts. I can only say that under the circumstances I yielded to what I conscientiously believed was an imperative necessity. After the arrival of counsel the same remedial measures were continued vigorously, and after a third or fourth convulsion as the pulse became more fully developed, the patient was bled ℥x. It was deemed advisable also to give Assafœtida, but from the excessive irritability of the stomach it was rejected and not again repeated. At this time it was proposed to try the effect of Opium internally, but the proposition was overruled by counsel. The convulsions continued for twelve hours with little abatement, the patient lying in a comatose state between the paroxysms. The water treatment was continued, and the bowels had been moved by emmata of Castor Oil, Turpentine and Milk. At this time, as the patient's strength seemed rapidly waning, the case was looked upon as hopeless; this opinion was concurred in by other intelligent counsel which had arrived. It was determined, however, as a *derrnier* resort, to try the effect of the warm wet blanket, and a liberal dose of Opium per anum. The warm blanket was applied, grs. v. of Haskell and Merrick's Powdered Opium administered by injection, and developments anxiously awaited. Soon after the exhibition of the opium, which was some two hours after the occurrence of a paroxysm, there was a pretty severe convulsion, though from the brief interval which had elapsed the primary operation of the narcotic could not have been the exciting cause.

There was only one or two more slight convulsions, making some twelve in all. The pulse grew firmer and steadier as the action of the opiate became manifest, the skin was bedewed with copious moisture and refreshing sleep followed. The lochial discharge, aided by the water treatment, was duly established, lactation commenced on the fourth day, and during the week which included the whole period of my attendance, there was not the slightest evidence of fever or visceral inflammation. This happy result, I have no doubt, was chiefly attributable to the sustaining power of the Opium, and the equalizing influence of the general fomentation.

The result of the case as regards the mother, certainly, was most happy, and under all the circumstances—though I would scorn to screen myself from deserved censure—I can hardly feel called upon to regret any part of my course. It has caused severe animadversion by consequence of misrepresentations, made no doubt to answer ulterior purposes. But the cause of truth will never suffer *permanently*, by the aspersions of malice. Candor may sometimes compel us to make confessions little flattering to personal vanity, but self aggrandizement is not the legitimate aim of philosophy. The physician who cannot afford to confess a wrong must have but few successes to boast. Hippocrates has had the honesty to confess that he once mistook a suture for a fracture of the skull—a confession which Cullen remarks does him more credit than his most brilliant discovery.

August 13, 1851.

[The good effects of Chloroform and Ether in cases of the description given above, and the promptness of their action, have commended their use to the favorable consideration of the profession; and where they have been tried it has generally been with the happiest effects. In a large proportion of the cases, their use and the Anodyne treatment are plainly indicated.—Ed.]

Cass County (Mich.) Medical Society.

The Medical Society met pursuant to adjournment. Dr. David E. Brown was called to the Chair, and Dr. A. Garwood was appointed Secretary.

The Society adopted a Consttution, By-Laws, code of Medical Ethics and a Fee Bill, which were reported by Committees that were appointed at a previous meeting.

The following members were present at the organization: Drs. D. E. Brown, J. Allen, E. H. Keables, L. Tompkins, E. Reading, B. Wells, H. Lockwood, A. Garwood, E. Penwell, J. G. Bugbee, E. J. Bonine, T. Brayton, and L. K. Raymond.

After the above named Physicians signed the Constitution, on motion of Dr. H. Lockwood, the Society proceeded to elect its officers, who were chosen as follows, viz:

President, Dr. D. E. Brown; Vice President, Dr. H. Lockwood; Secretary, Dr. A. Garwood; Treasurer, Dr. E. Penwell; Standing Committee, Drs. J. G. Bugbee, J. Allen, and B. Wells.

On motion of Dr. Wells, it was

Resolved, That the proceedings of this meeting be published in the National Democrat and North Western Advocate.

On motion of Dr. Bugbee, it was

Resolved, That the proceedings be published in the Boston Medical and Surgical Journal, and in the North-Western Medical and Surgical Journal.

On motion of Dr. H. Lockwood, the Society adjourned to meet on the first Monday in November next, at Edwardsburg, at 10 o'clock A. M.

D. E BROWN, *President.*

A. GARWOOD, Secretary.

Cassapolis, Aug. 14, 1851.

Part 2—Reviews and Notices of New Works.

ARTICLE I.

Experimental Researches, Illustrative of the Functional Oneness, Unity, and Diffusion, of Nervous Action; in opposition to the Anatomical Assumption, of Four Sets of Nerves, and a Four-fold Set of Functions, and Transmitted Impressions; with a brief Exposition of the Philosophy of Vivisection, and of Sensation. By BENNET DOWLER, M. D., of New Orleans, &c.

We have, through the politeness of the author, received a pamphlet with the above title, reprinted from the N. O. Med. and Surg. Journal.

Dr. Dowler is one of the few men in our country who have the temerity to doubt the correctness of the theories of "the most distinguished authors," and to publish the results of his own observations when they lead to conclusions at variance with those theories. He, too, is one of the few men in our profession who have the application and ability combined, to prosecute extensive and important original investigations. We know of no one in our country who has been more indefatigable in his labors, or who has developed more striking results. His observations upon post mortem heat, post mortem circulation, previous papers upon the Nervous System, with others of importance and interest, had already gained for him a distinguished position, and the paper before us can but add another sprigg to his laural wreath.

As is generally the case with original observers and thinkers, Dr. Dowler has come in for a full share of the animadversion of the critics. He has been sneered at for being remark-

able for striking discoveries, and his language has been censured for its peculiarities of style, and strong expressions.

But who has a right to condemn facts for their novelty? especially when developed in a new field of observation, as many of Dr. Dowler have been. And who can express strong ideas and forcible arguments without the use of correspondingly strong language?

To give a correct idea of the paper before us, it would be necessary to reprint the whole article, but this we are sorry our limits forbid us to do. We must, therefore, be content with a mere notice of some of the important conclusions to which the author arrives.

In a former paper, Dr. Dowler reported a series of experiments upon Alligators, by which he arrived at the conclusion that the different parts of the animal were endowed with their due proportion of the sensorium, which seemed to be satisfactorily proved by the fact that the decapitated body moved intelligently in the removal of irritating bodies when applied, as fire, &c., directing its feet so as to remove them, and when unable to succeed it would roll over always from the irritant. In the paper before us the same position is again demonstrated, and the diffusion of the sensorium apparently redemonstrated by experiments upon the same animal.

In addition to this demonstration, by dividing the nerves of the extremeties so as completely to interrupt the connection with the spinal cord, hours after the decapitation of the animal, the Doctor found that muscular motions were excited by compression of the nerve upon the distal side of the point of division; but no impression seemed to be made by compressing it on the other side of the division. From this and other facts, it is inferred that the peripheral portion of the nervous system is the more important, and acts, to some extent at least, independent of connection with the centres. By tracing the nerves toward the extremeties, he found that the nearer

he approached to the point of ultimate distribution the more active were the muscular twitchings and contractions, that were excited by their compression.

The tail of the animal after the division of the spinal cord at the point corresponding to the sacral region in man, and the passage of a probe down the caudal canal without any effect, manifested sensation and intelligential motion as evinced by its moving. "If a piece of ignited paper approached its right side it swayed itself to the left, and so of the contrary." In the two animals vivisected, one was decapitated at first, and the other the brain and spinal cord were destroyed with like general results. The tenacity of life in reptiles makes them better adapted to such experiments as have been performed by Dr. Dowler, than any other class of animals, and to this circumstance he owes much of the success of his experiments.

His conclusions that the sensorium is diffused, and that the nerves are more than mere conductors, seem to be strongly supported by his experiments and arguments; but the part of his paper arguing the functional oneness of the nervous system, we think based upon a more doubtful foundation. His quotations from Magendie to prove that the anterior and posterior roots of the spinal nerves are similar in function, should have been accompanied by an account of the equally recent, and, to say the least, fully as reliable experiments of M. Longet, who, while acknowledging the great difficulty of the experiments, (but great difficulty does not constitute impossibility,) satisfactorily demonstrated to a committee of the Academy of Medicine, and to his classes again and again, that compression of the anterior roots of the spinal nerves of the dog produced motion but no sensation, while a slight touch of the posterior roots invariably caused the animal to yell from pain. This, with the experiments of Sir Chas. Bell, and others, should at least offset the statements of M. Magendie in refer-

ence to the results of his experiments, until they shall be confirmed by others. And if there is no perceptible anatomical difference in the structure of nerves, the fact does not prove the unity of their functions against such evidence as that demonstrated to the Academy and to his classes by M. Longet, in corroboration of the doctrines of Sir Charles Bell. But it must be confessed, that it is remarkably difficult to prove conclusively a doctrine that has obtained such universal sanction that one almost stares to hear it doubted; and if Dr. Dowler shall not be able to prove the functional oneness of the whole nervous system, he may do good in setting us to work at hunting up the reasons why we believe that the nerves of sense are peculiar, as the optic, olfactory, &c. are thought to be, and why we believe some nerves are for motion and some for sensation exclusively.

The remarks upon the philosophy of Vivisection are judicious and well timed.

The author seems to be somewhat fearful of the critics, and indulges in what we hope to be an unnecessary foreboding of neglect, and somewhat like the boy in the dark, whistling to keep up his courage, he concludes his article as follows:

"Unlike a prisoner at the bar, an innovator has this consolation, namely, that if the present jury shall condemn him, unjustly, he can look with confidence to a future one, which soon, or late, will do him, and itself, justice, by embracing the truth; although, probably, for a time,

"It will be found upon examination,
That Satan has the largest congregation."

* * * * * * *

"A hundred cities claimed a Homer dead,
Through which a living Homer begged his bread."

An elegant writer, however, takes a view somewhat different: 'An author,' says D'Israeli, 'must consider himself as an arrow shot into the world; his impulse must be stronger than the current of air that carries him on—else he falls.' The plenitude of an author's complaints must appear, to such

as will not accept his contributions, as the veriest of all platitudes. A medical critic, in a foreign Review, says, upon this topic, 'that it is the invariable rule, to invoke the over-worked shades of Harvey and Galileo as illustrations.' "

ARTICLE II.

AMERICAN MEDICAL ASSOCIATION.

Report of the Committee on Practical Medicine. AUSTIN FLINT, M. D., Prof., &c., Chairman.

In our last we promised to give a more extended notice of this document. We now proceed to redeem that promise. As has already been observed, the report is systematic and well written—taken altogether we think it decidedly the best report upon the subject that has yet been submitted to the Association.

It commences by an account of the important improvements in the treatment of individual diseases. In his classification he follows the nosological arrangement of Dr. Goode, beginning with the diseases that affect the Digestive Organs.

Treatment of Dysintery by injections of the Nitrate of Silver, is well advocated by various authors, in the report. Among them are Dr. Lewis Slusser, of Ohio; Dr. Thweatt, of Va.; Dr. McGugen, of Iowa; Dr. Matthews, of Ind.; and Dr. N. A. J. Riddle, of Alabama.

Its treatment by the free use of Morphine, is advocated by Dr. Tullis of Troy, and Dr. Murphy of Cincinnati, Ohio; and by Dr. J. D. Trask, of N. Y.

Mr. Mussey, of Cincinnati, O., has found the granulated Tin an efficient remedy in Ternia.

Dr. Dawson, of the Commercial Hospital, Cincinnati, has reported his experience of the institution in the use of Wood Naptha in Diarrhœa, which shows very favorable success.

Doctor Jewett, of Maine, reports a case of Icterius treated by Sulph. Manganese with prompt success. But there is no disease (or symptom) more liable to deceive, as it often very rapidly recovers by the unaided efforts of nature.

First among the articles upon diseases of the respiratory Apsaratus noticed, are those of Prof. Ware, of Boston, on Croup, which are regarded as important.

The use of Nitric Acid in Asthma, has been recommended by Dr. Hopkins, of Georgia. He gives from five to ten drops three times a day in syrup or water.

The subject of withdrawing fluids from the chest by means of an Exploring Trochar and Canula attached to an exhausting pump, as practiced by Dr. Bowditch, of Boston; the use of Cod Liver Oil and the inhalation of Medicated powder, as recommended by Dr. Cornell, of Boston, close this part of the subject.

In reference to the management of diseases affecting the Nervous System, the report notices the accounts given by Dr. Guerard of S. C., and Dr. Satterlee of Wis., of the treatment of Hydrocephalus by the exhibition of Iodide of Potassium, in which its virtues are highly recommended.

Dr. Glenn, of S. C., and Dr. Gantt, of Md., have both treated Tetanus successfully with the Cannabis Indica.

Dr. Lebby, of S. C., has treated four cases of the same formidable malady successfully, by inducing Mercurial Salivation.

Dr. Smith, of N. J., has treated a case of Tranmatic Tetanus, in which the beneficial effects of Chloroform were manifested.

Dr. Hook, of S. C., has treated a case of Sciatic Neuralgia by the application of Chloroform to the part by a satura-

ted cloth, in which the relief was prompt and permanent. Dr. Holmes relieved a similar case by administering the same remedy internally.

The only notice in reference to the treatment of diseases of the Genito-Urinary organs, is the of treatment of Spermatorrhœa by Strychnine and Veratria Ointment, recommended by Dr. Campbell, of Georgia.

In reference to Typhoid fever the report is fuller, and quotes various authors, giving diversified modes of treatment.

We are well satisfied with the success that has attended the treatment of Typhoid fever with well salted animal broths, with but little medicine, in the Illinois General Hospital. Our limits will not allow a full synopsis of this part of the report, although it is very interesting.

Different authors bear testimony to the success of inunction in Scarlatina, as practiced by Dr. Schneeman. We have in several cases seen its good effects.

Notice is made of the treatment of Rubeola by the same means as proposed in an article we published last November.

Dr. McGirr's article on inoculation in Rubeola, receives an extended notice.

Dr. Bell, of Louisville, Ky., prefers as an *ectrotic* in Variola, a strong murcurial ointment, with two drachms of starch to the ounce.

Dr. Brinkerhoff, of Pa., proposed the application of Collodion to prevent pitting in this disease.

The abortive treatment of Intermittent fever by the free use of Quinine, is discussed by Dr. Bell. So general is the adoption of this course of treatment in our country now, that we deem it unimportant to give the arguments of the author. However, as the report is for the whole country, the space devoted to the use of Quinine is well used, and we hope it may do good where the profession is behind the times on this point. Notice is made of Prof. Brainard's treatment of Intermittents with Strychnine.

Dr. Upshur, of Virginia, speaks favorably of the use of Croton Oil, as a cathartic, in Rheumatism; next to it in point of importance he recommends the use of Quinine.

The tendency to employ leading articles of the materia medica indiscriminately is so strong, that we have been fearful that Quinine is destined to almost as universal an employment as Calomel has had. Though we regard it as a much safer remedy to be thus used, we hope the profession, now that it has before it the lesson of the calomel mania, will be careful not to carry the use of quinine, or any other remedy, to the extent of giving it universal applicability to the cure of disease.

Dr. Norwood, of S. C., has proposed the use of *Veratrum Viride*, or American Hellebore, for diminishing the force of the circulation in affections presenting this indication.

Prof. L. A. Dugas, of Ga., has called attention to the effects of large dilutions of certain remedies, such as Iodine, Arsenical preparations, Corrosive Sublimate, Calomel, &c. He thinks many advantages may be gained by dilution, a principle which the author of the report very justly regards as too often overlooked.

After calling attention to the remarks of Prof. Warren, on the use of cold Water as a Therapeutical agent, and some general observations upon sanitary measures, this part of the report is drawn to a close.

That part of the report treating of the progress of Epidemics, is full and quite catholic in its spirit, noticing all the accounts of Epidemics that had come to the knowledge of the Committee, but our space will not allow us to extend this notice further. We have noticed in preference the improvements in treatment, as both more interesting and more useful to our readers.

Part 3.—Editorial.

ARTICLE I.

WESTERN MEDICO-CHIRURGICAL JOURNAL.

This periodical is the organ of the Medical Department of the Iowa University. That institution is a prolongation of the Medical School that attempted to set up in St. Charles, Ill., a number of years ago; went from there to Laporte, Ind.; its organizers left there for *cause*, and set up the School in Rock Island, Ill.; thence removed it to Davenport, Iowa; and last of all moved it to the city of Keokuk.

As most of our readers know the dishonorable course pursued by this heretofore moving, trading, secret-remedy-promulging establishment toward Rush Medical College, we had not deemed it advisable to notice it in the Journal. But since the organ of the School has been publishing misrepresentations and false accusations against Rush Medical College, and has the audacity to say that those connected with that School do not deny them, we hope our readers will pardon us for thus briefly alluding to it.

As to Rush Medical College, its course has uniformly been open; its history is known to the profession at large. Its position upon the subject of fees, the alleged cause of offence, was assumed after it had been publicly advocated by Dr. Stevens, the eminent Ex-President of the American Medical Association, and adopted by the University of Michigan, one of its nearest neighbors. It stands in that position from principle, believing it to be the true policy; and its faculty will rejoice at the time when all the Schools of the country shall come up to it, regarding it as the harbinger of better times for the profession.

ARTICLE II.

PURE DRUGS AND MEDICINES.

We would call attention to the circular of Philip Schieffelin, Haines & Co. accompanying the present number of the Journal.

The subject of pure and unsophisticated medicines is one of as much importance to the practitioner as any to which his attention can be directed. We have recently, as a member of a committee of the American Medical Association, had occasion to examine into the subject in this region. We are sorry our observations were not received in time to be read at the late meeting of that body. Our information goes to prove that there are many articles of inferior quality, some entirely inert, and others pernicious in their properties, used by the physicians of the North-West. In fact, we learned from reliable sources, that when the pure articles were presented at a higher price than was placed upon the indifferent and sophisticated, many physicians would prefer the latter!!

Certainly in any light in which such a course can be viewed it is miserable policy. If the physician desires the specific effect of a remedy, it is necessary that he should have the genuine article to secure it, without which he will be unable to determine whether his failure, when it occurs, is in consequence of the worthlessness of the article or the impropriety of the prescription. And again, if he wants his articles to be *cheap*, he can buy the pure and adulterate for himself at a greater profit, and enjoy the advantage of knowing of what the adulteration consists.

ARTICLE III.

TO THE MEDICAL PROFESSION OF ILLINOIS.

Having been selected by the Chairman, Prof. T. Reyburn, of St. Louis, as an associate member of the Committee of the American Medical Association on the Epidemic Diseases of Missouri, Illinois, Iowa and Wisconsin, and the consideration of the subject for the State of Illinois having been assigned to me, I would solicit reports from the physicians of the state of any and all epidemics that have prevailed within their respective regions of country from the commencement of the year 1849 up to the close of 1851. Information furnished shall be duly credited in the report.

JOHN EVANS.
No. 108 Randolph St., Chicago.

ARTICLE IV.

CIRCULAR.

To the Medical Profession of the United States.

The undersigned having been appointed, at the last meeting of the American Medical Association, Chairman of the Committee on the "Results of Surgical Operations in Malignant Diseases," respectfully solicits contributions to the subject, founded upon personal observation. To place the subject in as tangible a form as possible, he begs leave to direct attention to the following points:

1. The difference between cancerous and cancroid diseases, or those affections which are truly malignant, and those which are only partially so. In the former category are comprised scirrhus, encephaloid, and melanosis; in the latter, certain maladies of the skin and mucous tissues, as lupus, cheloid, eiloid, and cancer of the lip.

2. The precise seat of the disease, as the skin and subcutaneous cellular tissue; the eye, ears, nose, face, lips, tongue, salivary glands, juws, and gums; the lymphatic ganglions of the neck, axilla, groin, and other regions; the mammary gland, uterus, ovary, vulva and vagina, penis and testis; the anus and rectum; and, finally, the extremities.

3. The age, sex, temperament, sesidence, and occupation of the patient.

4. The cause of the disease, its progress, and the state of the part and of the system at the time of the operation.

5. Mode of operation; whether by the knife, caustic or ligature.

6. Time of death, or relapse, after operation.

7. Examination of the morbid product; how conducted—whether by the unassisteb eye alone, or by means of the microscope, and chemical tests.

The undersigned hopes that the importance of the subject confided to him, as Chairman of the Committee above referred to, will be sufficiently appreciated by his professional brethren to induce them to aid him in carrying out the wishes of the American Medical Association. The subject is one of absorbing interest, and cannot fail, if properly treated, to elicit matter of the greatest benefit. It is very necessary that all communications upon the subject should be sent to the Chairman of the Committee by the 1st of January, 1852.

Medical Journals, and newspapers friendly to the interests of medical science, will confer a favor upon the undersigned by inserting the above notice.

S. D. GROSS, M. D.

University of Louisville, June 29, 1851.

ARTICLE V.

MISCELLANEOUS MEDICAL INTELLIGENCE.

Health of Chicago.—The Cholera has been prevailing to a limited extent in Chicago since early in July, the deaths ranging from one to six a day from that time to the present. So far the season has been much more healthy than for several

years past. The Dysintery, though attracting less public attention than Cholera, is much more prevalent, yet it is generally mild in its character. A few cases of Remitting fever have presendte within the last week or ten days.

New Journal.—We have received the Nashville Medical Journal, and welcome it to our list of exchanges. It is well got up, and filled with interesting matter. We wish it success.

The New Jersey Medical Reporter has been changed from a quarterly to a monthly visitant, and is always welcome.

The Transactions of the College of Physicians are now published quarterly at one dollar per annum. It is one of the most interesting and useful periodicals of the country.

The forthcoming volume of the Transactions of the American Medical Association will contain the prize Essay on Ovulation of Prof. J. C. Dalton, jr., of the Buffalo University, embellished with several fine engravings. Members of the Association can obtain it by remitting two dollars to I. Hays, M. D., Treasurer, Philadelphia.

By the language of a notice of Prof. Armor's appointment to a chair in the Cleveland University, in a Cleveland paper marked and sent to us by some one, in which he is styled late Professor in the Iowa University, we were led to infer that he had resigned his place in the latter School; but we observe that instead of this, he has not only accepted the Chair in the Cleveland College referred to, but has had an additional Chair assigned to him in the Iowa School—being now Professor of Physiology, Pathology and Clinical Medicine, and also of Theory and Practice.

We have the pleasure of presenting our readers with another number of our Journal entirely filled with original matter.

ARTICLE VI

NOTICE TO READERS AND CORRESPONDENTS.

We have received original communications from Drs. Smick and McArthur, and will have for the next number of the Journal an interesting report of cases from the Illinois General Hospital of the Lake.

We have received the Transactions of the Medical Society of the State of New York for 1851; the Transactions of the New York Academy of Medicine for 1851; the Proceedings of the Medical Association of the State of Alabama for 1851; Prof. Jno. C. Warren's Address before the American Medical Association at Cincinnati, (from the author); Report of the Trial of Wm. R. Winton, M. D., (from the defendent); Minutes of the Proceedings of the Medical Society of the State of Georgia for 1851; Proceedings of the Twenty-Second Annual Meeting of the Medical Society of Tennessee, 1851; By-Laws of the Indiana Hospital for the Insane, 1851; an Address by Thos. E. Bond, A. M., M. D., to the Graduates of Washington University of Baltimore, 1851. We had written a notice of this Address, but it was unavoidably crowded out for want of room. An Address by Prof. A. Litton to the Graduates of the St. Louis University, 1851; the Valedictory Address of Prof. Downey to the Graduates of the Indiana Central Medical College, 1851: together with the Annual Announcements of the Medical Department of the University of Pennsylvania, of Jefferson Medical College, Starling Medical College, Medical Department of the University of Michigan, New York Medical College, Medical College of the State of South Carolina, University of New York, Western Reserve College, Kentucky School of Medicine, Medical Department of the St. Louis University, Medical College of Ohio, Hampden Sydney College, Richmond, Va., and of the Indiana Central Medical College. Also our usual list of exchanges.

OBITUARY.

Died, at Elgin, Ill., Aug. 6th, of Consumption, Dr. Erastus Sanford, in the 31st year of his age.

The highest testimonials of his geod stahding in the profession and in society, have been furnished.